Tumble Dryers

120 Pound Capacity
170 Pound Capacity
200 Pound Capacity

Models Starting Serial No. 0907003062
Refer to Page 6 for Model Numbers
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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.

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

**DANGER**

Danger indicates an imminently hazardous situation that, if not avoided, will cause severe personal injury or death.

**WARNING**

Warning indicates a hazardous situation that, if not avoided, could cause severe personal injury or death.

**CAUTION**

Caution indicates a hazardous situation that, if not avoided, may cause minor or moderate personal injury or property damage.

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.
IMPORTANT INFORMATION: During the lifetime of a 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 a tumbler, and who are equipped with the proper tools and testing equipment.

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.

---

**WARNING**

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

---

**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.

---

**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.
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.

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 the Parts Manual for ordering replacement decals.

Safety Precautions for Servicing Tumblers

- Disconnect electrical service.
- Shut off supply gas valve before servicing gas components.
- Access panel MUST be reinstalled after inspection or servicing of tumble dryer is completed.
- Use a non-corrosive leak detecting compound to check all pipe connections for gas leaks. DO NOT USE AN OPEN FLAME TO CHECK FOR GAS LEAKS!
- Belt guard MUST be reinstalled after inspection or servicing of tumble dryer is completed.
- Contactor box cover MUST be reinstalled after inspection or servicing of electric and/or reversing tumble dryer is completed.
- Loading door switch MUST be operational before putting tumble dryer into service.
- Junction box cover MUST be reinstalled after inspection or servicing of tumble dryer is completed.
### Section 2

**Introduction**

**Model Identification**

Information in this manual is applicable to these models:

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(Continued)
Includes models with the following control suffixes:

- R3 – reversing DX4 OPL
- RE – reversing LED OPL
- RQ – reversing dual digital timer
- RD – reversing DMP OPL
- RM – reversing OPL micro
- RU – reversing UniLine OPL
Introduction

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 as shown.
How a Tumble Dryer Works

A tumble dryer uses heated air to dry loads of laundry.

① When the motor is started, the exhaust fan pulls room temperature air in through the air intake at the rear of the tumble dryer and over the heat source (burner flame for gas, heating element for electric, and coil for steam).

② The heated air moves into the cylinder, where it is circulated through the wet load by the tumbling action of the cylinder.

③ The air then passes through the lint filter, exhaust fan, and is vented to the outdoors.
Introduction

Fire Suppression System Theory of Operation

IMPORTANT: The fire suppression system is designed to diminish a laundry fire starting inside a fire suppression system equipped tumble dryer. The fire suppression system is not designed to stop or eliminate high temperature and spontaneous combustion situations. Follow all instructions in the installation manual to ensure the fire suppression system operates properly. Train all operators in the proper preventative maintenance of the fire suppression system.

IMPORTANT: For safety purposes, do not operate tumble dryer if a fire has occurred.

Figure 1

1 Temperature Sensors
2 Fire Suppression System Control Box
3 Water Flow to Machine
4 Lint Screen
5 Load
6 Loading Door
Temperature Sensor

Two temperature sensors are located in the cylinder area of the tumble dryer to provide temperature readings. Refer to Figure 1 and Figure 2. These temperature sensors will trigger a mode change based on a pre-set temperature trip-point.

1 Opening for Auxiliary Alarm Cable
2 Fuse
3 Auxiliary Alarm Fast-On Connection
4 Test Button
5 Light
6 Reset Button
7 Auxiliary Alarm Fast-On Connection

Figure 2
Introduction

Modes of Operation

Power-Up Mode
Sends power to control, begins a status check of the system. Can send control into Idle Mode or Lockout Mode.

Idle Mode
Machine is operable while it monitors temperature sensor readings. Control will enter Power Disconnect Mode if temperature trip-point is exceeded.

Power Disconnect Mode
Machine is disabled and controls on front will not operate, will enter Power Disconnect Mode for one second, then Water On Mode.

Water On Mode
Machine is disabled and controls on front will not operate. Remain in this mode for 90 seconds, then enter Lockout Mode. Can enter Lockout Error Mode if both temperature sensors become open, which occurs when temperature is below 40°F (4°C). Will enter Idle Mode if reset button is pressed. Refer to Figure 2.

Lockout Mode
Machine is disabled and controls on front will not operate. Control monitors temperature readings. Enters Water On Mode if temperature trip-point is exceeded. Will enter Idle Mode if reset button is pressed.

Lockout Error Mode
Machine is disabled and controls on front will not operate. Water dispenses for four minutes. When the reset button is pressed, the control enters Idle Mode.
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.

IMPORTANT: Refer to appropriate wiring diagram for aid in testing tumble dryer components.
1. Motor Does Not Start

Motor does not start

- Is electrical power off, has circuit breaker tripped or has control fuse blown?
  - Yes: Check service to tumbler. Check primary and secondary fuses.
  - No: Is transformer inoperative?
    - Yes: Replace transformer.
    - No: Is loading door open or is door switch inoperative?
      - Yes: Close door or test switch and replace if inoperative.
      - No: Is lint panel switch not closing?
        - Yes: Test lint panel switch, replace if inoperative.
        - No: Are trunnion bearings binding?
          - Yes: Replace trunnion bearings.
          - No: Are idler bearings binding?
            - Yes: Replace bearings.
            - No: Is motor inoperative?
              - Yes: Have motor tested and replace if inoperative.
              - No: Is there broken, loose or incorrect wiring?
                - Yes: Refer to wiring diagram located on back of tumbler or in literature packet.
2. Motor Overload Protector Cycles Repeatedly

Motor overload protector cycles repeatedly

Is voltage incorrect?
- Yes: Refer to the Installation Manual for electrical requirements.
- No:
  - Is clothes load too large?
    - Yes: Remove part of load.
    - No: Is clothes cylinder binding?
      - Yes: Check cylinder for binding. Refer to Adjustments Section for cylinder adjustment.
      - No: Is wiring inadequate?
        - Yes: Check with an electrician to ensure that wiring is adequate.
        - No: Has lint built up?
          - Yes: Clean lint accumulation on and around motor.
          - No: Is there broken, loose or incorrect wiring?
            - Yes: Refer to wiring diagram located inside contactor box.
            - No:
3. Motor Runs But Cylinder Does Not Turn

Motor runs but cylinder does not turn

Is motor drive pulley loose?

Yes

Tighten drive pulley bushing screws.

No

Are cylinder belts broken or loose?

Yes

Replace or adjust belts.

No

Is drive belt broken or loose?

Yes

Replace or adjust belt.

No

Is cylinder binding?

Yes

Check cylinder for binding. Refer to Adjustments Section for proper cylinder adjustment.

No
4. Motor Does Not Stop

Motor does not stop

Is door switch or lint panel switch inoperative?

Yes  Test switches and replace if inoperative.

No

Is wiring incorrect?

Yes  Refer to wiring diagram located on back of tumbler or in literature packet.

No

Is motor contactor inoperative?

Yes  Test motor contactor and replace if inoperative.
5. No Heat Condition (Non-CE and Non-Australian Models)

![WARNING]

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

**Ignition Control Module Function**

There are four components to the ignition system: the module, the spark igniter, the high voltage cable and ground wire. When 24 V AC is applied between the TH and GND terminals on the module, the module will send the high voltage signal to the igniter and 24 V AC to the gas valve coils. Gas will hit the sparking igniter and flame will be established. The igniter being engulfed in flame will create a millivolt electric signal that is sent back to the module by the high voltage cable; this is what the module sees as flame recognition. If the millivolt signal is not at the module in ten seconds, the module will go into safety lockout. The voltage will be cut from the igniter and gas valve coils and will not be restored until voltage is cycled at the module.

**Intermittent Heat Test Procedure**

On ignition control modules with date codes higher than 08t2, perform the following test.

Start the tumble dryer and run for 10 minutes (verify that the tumble dryer is heating properly). After the 10 minute cycle, re-start the tumble dryer and once again verify the unit is heating. Repeat this procedure 3 times. If the tumble dryer passes this test, the ignition control module is operating properly and SHOULD NOT be changed. Refer to Troubleshooting Manual for additional service procedures.
6. No Heat Condition

Is the Ignition Control Module’s red light on?

- No: Refer to Paragraph 7.
- Yes:

  Does the igniter spark?

  - No: Refer to Paragraph 7 for heat circuit troubleshooting.
  - Yes:

    Is there 24 volts AC between the TH and GND terminals on the module?
    - No:
      - No: Replace igniter and high voltage lead. Retest unit. If unit still does not spark, replace module.
      - Yes:
        - No: Check wiring between gas valve and module. If wiring is good, replace module.
        - Yes:

    Does the igniter spark but no flame is produced?
    - No: Verify that gas is supplied to the machine. If gas and voltage are present, replace gas valve or coils.
    - Yes:

    Is there 24 volts AC at the gas valve coils when igniter is sparking?
    - No:
      - No: Replace module. Adjust position of igniter and retest.
      - Yes: Verify machine is properly grounded.
    - Yes:

    Is the igniter positioned properly in the flame, and does the flame look good?
    - No:
      - No: Replace igniter and high voltage lead. Retest unit. If it still does not sense flame, replace module.
      - Yes: Is there continuity between GND terminal on module and machine?
        - Yes: Replace module.
Troubleshooting

7. Gas Burner Does Not Ignite

Gas burner does not ignite

Is exhaust system inadequate? Yes

Refer to the Installation Manual for exhaust system requirements.

No

Is thermostat inoperative? Yes

Test thermostat and replace if inoperative.

No

Is gas supply insufficient? Yes

Open partially closed gas shut-off valve or correct low gas pressure. Check manifold pressure and adjust to pressure specified on serial plate. If pressure cannot be obtained, have gas supplier check main pressure.

No

Are orifices incorrect? Yes

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.

No

Are gas valve coils inoperative? Yes

Test coils and replace if inoperative.

No

Is there lint buildup? Yes

Clean lint compartment after every eight-hour shift. Check back draft damper for lint accumulation. Check ductwork for lint build-up.

No

Is make-up air or ductwork inadequate? Yes

Refer to Installation Manual to ensure that ductwork and make-up air openings are sized properly.

No

Is airflow switch inoperative? Yes

Test switch and replace if inoperative.

No

Is there broken, loose or incorrect wiring? Yes

Refer to wiring diagram located on back of tumbler or in literature packet.

No

Is there improper fan rotation? Yes

May be due to improper wiring resulting in low airflow. Refer to Installation Manual.
8. Burner Ignites and Goes Out Repeatedly

- Burner ignites and goes out repeatedly

  - Is gas pressure insufficient? 
    - Yes: Check gas supply and pressure. Low flame will not maintain sensor conductivity.
    - No

  - Are burner ports plugged? 
    - Yes: Check burner tubes for build-up.
    - No

  - Is exhaust system or make-up air inadequate? 
    - Yes: Refer to Installation Manual for exhaust and make-up air requirements.
    - No

  - Is high limit or cabinet limit thermostat inoperative? 
    - Yes: Test thermostat and replace if inoperative.
    - No

  - Are orifices improper? 
    - Yes: 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.
    - No

  - Is flame recognition circuit improper? 
    - Yes: Replace high voltage lead. Replace igniter. Replace ignition control module.
9. Burner Shuts off Prematurely

- Burner shuts off prematurely
- Is there improper or inadequate exhaust and/or make-up air? 
  - Yes: Refer to Installation Manual for exhaust and make-up air requirements.
  - No
- Is tumbler not properly equipped for type of gas used or altitude? 
  - Yes: Tumbler is equipped for type of gas specified on serial plate. If not properly equipped for gas type and altitude, obtain and install correct components.
  - No
- Is burner flame improperly adjusted? 
  - Yes: Refer to Adjustments Section for burner flame adjustment.
  - No
- Is high limit thermostat cycling off? 
  - Yes: Refer to Paragraph 8.
  - No
- Is fan rotation improper? 
  - Yes: May be due to improper wiring resulting in low airflow. Refer to Installation Manual.
  - No
- Are gas valve coils inoperative? 
  - Yes: Test coils and replace if inoperative.
10. Burner Repeatedly Cycles Off On High Limit Thermostat

- **Burner repeatedly cycles off on high limit thermostat**

  - **Is external exhaust system longer than recommended or is there inadequate make-up air?**
    - Yes: Refer to *Installation Manual* for exhaust and make-up air requirements.
    - No: **Is lint screen clogged?**
      - Yes: Remove screen and clean. Lint screen and compartment should be cleaned after every eight hour shift.
      - No: **Is there lint in internal tumbler ductwork?**
        - Yes: Disassemble tumbler ductwork and clean.
        - No: **Is there lint in external exhaust system?**
          - Yes: Disassemble exhaust system and clean.
          - No: **Is there lint door panel not closed properly?**
            - Yes: Remove lint door panel - place lint door panel back on tumbler (ensuring a tight fit).
            - No: **Is there improper fan rotation?**
              - Yes: May be due to improper wiring resulting in low airflow. Refer to *Installation Manual.*
              - No: **Is high limit thermostat cycling at too low a temperature?**
                - Yes: Replace thermostat.
                - No: **Is lint door panel not closed properly?**
                  - Yes: Remove lint door panel - place lint door panel back on tumbler (ensuring a tight fit).
                  - No: **Is lint screen clogged?**
                    - Yes: Remove screen and clean. Lint screen and compartment should be cleaned after every eight hour shift.
                    - No: **Is there lint in internal tumbler ductwork?**
                      - Yes: Disassemble tumbler ductwork and clean.
                      - No: **Is there lint in external exhaust system?**
                        - Yes: Disassemble exhaust system and clean.
                        - No: **Is external exhaust system longer than recommended or is there inadequate make-up air?**
                          - Yes: Refer to *Installation Manual* for exhaust and make-up air requirements.
                          - No: **Is lint screen clogged?**
                            - Yes: Remove screen and clean. Lint screen and compartment should be cleaned after every eight hour shift.
                            - No: **Is there lint in internal tumbler ductwork?**
                              - Yes: Disassemble tumbler ductwork and clean.
                              - No: **Is there lint in external exhaust system?**
                                - Yes: Disassemble exhaust system and clean.
                                - No: **Is external exhaust system longer than recommended or is there inadequate make-up air?**
                                  - Yes: Refer to *Installation Manual* for exhaust and make-up air requirements.
                                  - No: **Is lint screen clogged?**
                                    - Yes: Remove screen and clean. Lint screen and compartment should be cleaned after every eight hour shift.
                                    - No: **Is there lint in internal tumbler ductwork?**
                                      - Yes: Disassemble tumbler ductwork and clean.
                                      - No: **Is there lint in external exhaust system?**
                                        - Yes: Disassemble exhaust system and clean.
                                        - No:
11. Steam Valve or Burner Does Not Shut-off

Steam valve or burner does not shut-off

Are there impurities on gas valve seat, preventing valve from closing?

Yes → Replace gas valve or disassemble and clean steam valve.

No → Is wiring incorrect?

Yes → Refer to wiring diagram located on back of tumbler or in literature packet.
12. Clothes Do Not Dry

Clothes do not dry

Is heat source inoperative?
Yes → Refer to Paragraph 17.
No

Is there too much water in articles being dried?
Yes → Remove excess water.
No

Is clothes load too large?
Yes → Remove part of load. 120 or 170 pounds dry weight (AHAM cotton load) is maximum load.
No

Is exhaust system improper or inadequate?
Yes → Refer to Installation Manual for exhaust requirements.
No

Does heat source shut-off prematurely?
Yes → Refer to Paragraph 18.
No

Is voltage incorrect?
Yes → Refer to Installation Manual for electrical requirements.
No

Is make-up air inadequate?
Yes → Refer to Installation Manual for make-up air requirements.
No

Is there improper fan rotation?
Yes → May be due to improper wiring resulting in low airflow. Refer to Installation Manual.
No
13. Tumble Dryer Overheating

Gas Models: Are main burner orifices incorrect?

- Yes: Replace orifices.
- No: Is gas pressure too high?

- Yes: Adjust gas pressure as specified on serial plate.
- No: Is make-up air inadequate?

- Yes: Refer to Installation Manual for make-up air requirements.
- No: Test thermistor by removing harness from thermistor terminals. Check resistance across terminals, should read approximately 50,000 Ohms at 77°F. Resistance should decrease with a temperature increase. Replace thermistor if inoperative.

Steam Models: Is steam solenoid valve stuck open?

- Yes: Clean solenoid valve and replace if necessary.
- No: Is exhaust system restricted or inadequate?

- Yes: Remove obstruction or lint build-up from exhaust ductwork. Refer to Installation Manual for exhaust system requirements.
- No: Is there lint accumulation?

- Yes: Remove lint.
- No: TMB1927S
14. Burners Not Burning Properly - Gas Models

Are burner air shutters incorrectly adjusted?

Yes: Refer to Adjustments Section for proper flame adjustment.

No: Is there foreign material in burners?

Yes: Disassemble burners and remove obstruction.

No: Is gas pressure too high or too low?

Yes: Check serial plate on back of the tumbler for correct gas pressure.

No: Are orifices incorrect?

Yes: 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.

No: Is exhaust duct restricted or blocked?

Yes: Disassemble and clean exhaust system.

No: Is airflow switch not functioning properly?

Yes: Check adjustment and replace airflow switch if necessary.

No: Is fan rotation improper?

Yes: May be due to improper wiring resulting in low airflow. Refer to Installation Manual.

No
15. Loading Door Opens During Operation

- **Loading door opens during operation**

  - **Is door strike improperly adjusted?**
    - Yes
    - Refer to **Installation Manual** for leveling leg adjustment.
    - No
    - Refer to **Adjustments Section** for door strike adjustment.

  - **Is tumbler improperly leveled?**
    - Yes
    - Refer to **Installation Manual** for leveling leg adjustment.
16. Tumble Dryer Runs But No Steam To Coils – Steam Models

Tumbler runs but no steam to coils - Steam Models

- Are shut-off valves closed? 
  - Yes: Check all valves in supply and return lines, make sure they are open.
  - No: 

- Is steam trap blocked? 
  - Yes: Remove trap and clean. Replace if inoperative.
  - No: 

- Is solenoid valve inoperative? 
  - Yes: Check operation of solenoid valve.
  - No: 

- Is check valve incorrectly installed? 
  - Yes: Check for inlet and outlet markings on check valve and invert if necessary.
  - No: 

- Is strainer clogged? 
  - Yes: Remove strainer and clean.
  - No: 

- Is steam valve clogged? 
  - Yes: Remove steam valve and clean or replace. Clean strainer before returning unit to service.
  - No:
Troubleshooting

17. Water In Steam Line – Steam Models

Is steam piping installed incorrectly?

- Yes: Refer to Installation Manual for steam requirements.
- No: Is trap functioning improperly?

- Yes: Check trap for size and capacity. If trap is dirty or sluggish, clean thoroughly or replace. Check return line for high back pressure. Check trap for proper installation. Refer to Installation Manual for requirements.
- No: TMB1930S
18. Tumble Dryer Will Not Start, Time On Drying Timer, Door Closed

Tumbler will not start, time on drying timer, door closed.

- Is there line voltage into transformer? [No]
  - Check electrical service to tumbler (fuses/circuit breaker).
  - Is there control (24 VAC) voltage out of transformer? [No]
    - Replace transformer.
  - Is there a blown control circuit fuse? [Yes]
    - Replace fuse.
  - Is there 24 volts into door switch? [No]
    - Check for broken wire between fuse and door switch.
    - Is there 24 volts out of door switch? [Yes]
      - Replace door switch.
      - Is door switch functioning properly? [Yes]
    - Is there 24 volts across fan contactor coil? [No]
      - Check for broken wire or poor connection at harness plug.
      - Replace fan contactor.
  - Is there 24 volts into lint panel switch? [Yes]
    - Check for broken wire between fuse and lint panel switch.
    - Is lint panel switch functioning properly? [Yes]
      - Replace or adjust lint panel switch.
      - Is there 24 volts out of lint panel switch? [No]
        - Check for broken wire between fuse and lint panel switch.
        - Is there 24 volts into lint panel switch? [No]
          - Replace or adjust lint panel switch.
Troubleshooting

Tumble Dryer Will Not Start, Time On Drying Timer, Door Closed RM Control
19. Motor Runs But Will Not Heat

Motor runs but will not heat

- Is igniter sparking? No
  - Is IEI control in safety lockout? No
    - Is resistance of high voltage lead greater than 28,000 ohms or less than 10,500 ohms? No
      - Is igniter gap not 5/32 inch (.397 cm) or is ceramic cracked? No
        - Replace IEI control.
      - Yes
        - Replace high voltage lead.
    - Yes
      - Regap or replace igniter.
  - Yes
    - Non-CE and non-Australian models: Open and close door.
    - CE and Australian models: Press and hold reset button until light goes out on the button.
    - Connect GRN/YEL wire to ground terminal.

- Is GRN/YEL wire from IEI control connected to ground terminal? No
  - Connect GRN/YEL wire to ground terminal.
  - Is there an open circuit on gas valve coils? No
    - Replace gas valve or coil.
  - Yes
    - Is gas shut-off valve turned on? No
      - Turn on gas shut-off valve.
      - Yes
        - Replace gas valve or coil.
  - Yes
    - Is gas shut-off valve turned on? No
      - Connect GRN/YEL wire to ground terminal.
      - Is there an open circuit on gas valve coils? Yes
        - Replace gas valve or coil.
      - No
        - Replace gas valve or coil.
20. Cylinder Turns, But Will Not Heat

Cylinder turns, but will not heat

Does airflow switch stay open?

Yes

Is fan turning counterclockwise as viewed from the front?

Yes

Refer to Installation Manual for makeup air and exhaust duct requirements.

No

Reverse any two of the electrical service leads at the fan motor contactor.

No

Is gas shut-off valve open?

Yes

Is there 24 volts present at output terminal of stove high limit thermostat?

Yes

Check for broken or loose wire to relay.

No

Is there 24 volts present at input terminal of stove high limit thermostat?

Yes

Replace stove high limit thermostat.

No

Open gas shut-off valve.

Yes

Check for broken or loose wire to stove high limit thermostat.

No

Is there 24 volts present at output terminal of airflow switch?

Yes

Continued on next page.
Troubleshooting

20. Cylinder Turns, But Will Not Heat (continued)

Continued from previous page.

Is there 24 volts present at input terminal of airflow switch?

No

Is there 24 volts present at output terminal of exhaust high limit thermostat?

No

Is there 24 volts present on org/wht wire of fan motor?

No

No

No

Yes

Replace airflow switch.

Yes

Check for broken or loose wire to airflow switch.

Yes

Replace cabinet limit thermostat.

No

Check for broken or loose wire to cabinet limit thermostat.
21. Cylinder Is “Stained”
Over time, the cylinder and cylinder backs of tumble dryers can become “stained” from various melted fabrics. These discolored areas can be removed by scrubbing the inside of the cylinder with cleaner and a cleaning pad, such as Scotch-Brite®.

IMPORTANT: Do not use a steel wool pad to clean the cylinder. Steel wool can damage your machine.

Galvanized Cylinders
For galvanized cylinders, use an all-purpose cleaner (such as 409®) and a cleaning pad (such as Scotch-Brite®) to clean the inside of the cylinder.

1. Spray the cleaner on the discolored areas and let soak for a few minutes.
2. Using the pad, scrub the areas until the discoloration is removed.
3. Repeat steps 1-2 as necessary.
4. Thoroughly wipe the entire cylinder after cleaning to insure the cleaner has been removed.

Stainless Steel Cylinders
For stainless steel cylinders, use a heavy duty powder cleanser (such as Zud®) and a cleaning pad (such as Scotch-Brite®) to clean the inside of the cylinder.

1. Using a water spray bottle, wet the cylinder and cylinder back.
2. Sprinkle cleanser onto the pad and scrub the discolored areas.
3. Repeat steps 1-2 as necessary.
4. Thoroughly wipe the entire cylinder after cleaning to insure the cleanser has been removed.
Section 4
Fire Suppression System Troubleshooting

![WARNING]

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

A water discharge or system fault is indicated when the fire suppression system control box light is on.

IMPORTANT: When handling electronic controls, use a ground wrist strap. Due to the sensitivity of electronic controls, careful handling is required. 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.
22. Tumble Dryer Does Not Operate and Light Is On

- Are there signs of fire or water discharge?
  - Yes: Was there a fire?
    - Yes: Replace tumble dryer.
    - No: Refer to Water Discharge No Fire flowchart.
  - No: Replace tumble dryer.

- Call the fire department. DO NOT disconnect electric power to the tumble dryer. DO NOT disconnect water to the tumble dryer. DO NOT touch the tumble dryer.

- Does tumble dryer operate after pressing the reset button for at least one second?
  - Yes: Retest. (Extreme cold weather will cause a system shutdown.)
  - No: Is there power (5 Volts DC) between H2-3 and H2-4 of the reset button?
    - Yes: Disconnect power to tumble dryer.
      - Yes: Replace switch.
      - No: Replace reset button.
    - No: Run a continuity test across the reset switch. Is it shorted?
      - Yes: Replace fire suppression system control board.
      - No: Reset fire suppression system control.

- Is the resistance for both temperature sensors within the acceptable range?* 
  - Yes: Replace fire suppression system control board.
    - Yes: Reset fire suppression system control.
    - No: Replace temperature sensors.
  - No: Acceptable resistance ranges from 150K Ohms to 19K Ohms in temperature ranges from 40° to 120° F (4° to 48° C).

*Acceptable resistance ranges from 150K Ohms to 19K Ohms in temperature ranges from 40° to 120° F (4° to 48° C).
Fire Suppression System Troubleshooting

23. Water Discharge, but No Fire

IMPORTANT: Electric Models: If water has discharged into machine, you MUST perform this diagnostic test with NO HEAT to the machine.

- Is the unit a reversing model?
  - Yes: Set control to nonreversing.
  - No: Electric Models: Set to no heat.

  - Electric Models: Set to no heat.
    - Is the cylinder turning clockwise?
      - Yes: Correct input wiring to change phase. (Fan is spinning backward.)
      - No: Start unit.

  - Start unit.

- Is the vent blocked or restricted?
  - No: Replace fire suppression system control board.

- Replace fire suppression system control board.

- Reset fire suppression system control.

- Retest.

- Replace temperature sensors.

- Replace temperature sensors.

- Correct input wiring to change phase. (Fan is spinning backward.)

- Is the resistance for both temperature sensors within the acceptable range?*
  - Yes: Acceptable resistance ranges from 150K Ohms to 19K Ohms in temperature ranges from 40˚ to 120˚ F (4˚ to 48˚ C).
  - No: Acceptable resistance ranges from 150K Ohms to 19K Ohms in temperature ranges from 40˚ to 120˚ F (4˚ to 48˚ C).


- Retest system.

- Retest system.

- Retest system.
24. Tumble Dryer Does Not Operate and Light Is Off

- Is voltage to fire suppression system control 24 VAC between H1-7 and H1-1?
  - Yes
  - No
    - Is voltage to light 2 VDC between H2-1 and H2-2?
      - Yes
      - Replace light.
      - Retest
      - No
        - Replace fuse.
        - Retest fuse.
        - Reset fire suppression system control board.
        - Retest
    - No
      - Replace fire suppression system control board.
      - Retest
- Check power to tumble dryer and connections to junction box.
25. Tumble Dryer Operates, but Water Does Not Discharge and Light Is On

Verify water is supplied to valve at the proper pressure and flow rate. Refer to **Installation section**.

- **Yes**: Turn off tumble dryer. Are water inlet screens clogged?
  - **Yes**: Clean inlet screens, then turn on water. Reset fire suppression system control. Retest
  - **No**: Reset fire suppression system control. Retest

- **No**: Make corrections to meet water requirements of system. Reset fire suppression system control. Retest

Turn off tumble dryer. Are water inlet screens clogged?

- **Yes**: Clean inlet screens, then turn on water. Reset fire suppression system control. Retest

- **No**: Reset fire suppression system control. Retest

Using an AC voltmeter, within 90 seconds, is there voltage to the water manifold valve?

- **Yes**: Disconnect hose from water valve outlet. Retest

- **No**: Does water come out of valve?
  - **Yes**: Correct wiring. Refer to wiring diagram on the following page. Reset fire suppression system control. Retest
  - **No**: Are water hoses or the manifold nozzle clogged?
    - **Yes**: Clear any debris. Reset fire suppression system control. Retest
    - **No**: Replace water valve.

Is wiring between valve and fire suppression system control good?

- **Yes**: Replace fire suppression system control. Retest

- **No**: Correct wiring. Refer to wiring diagram on the following page. Reset fire suppression system control. Retest
Section 5
Adjustments

26. Main Gas Burner Air Inlet Shutters (All Gas Models)
Refer to Figure 3.

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 the air shutter as follows:

- Remove access panel.
- Start tumbler and check the flame pattern. Correct air and gas mixture is indicated if the flame pattern is primarily blue, with small yellow tips, and bends to the left of the heater section. Too little air is indicated if the flame is yellow, lazy and smokey.
- To adjust the air inlet shutter, loosen locking screw.
- Slide shutter in or out as necessary to obtain desired flame intensity.
- After shutter is adjusted, tighten locking screw securely.
- If the flame pattern is straight up, insufficient air is flowing through the tumbler. A flame pattern that flares to the right and left indicates that no air is flowing through the tumbler. Check make-up air and exhaust vent.

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.

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.
27. Airflow Switch

The airflow switch is set at the factory for proper operation. No adjustment necessary.

The airflow switch operation may be affected by shipping tape still in place, lack of make-up air, or an obstruction in the exhaust duct. These should be checked and the required corrective action taken.

**WARNING**

The tumble dryer must not be operated if the airflow switch does not operate properly. Faulty airflow switch operation may cause an explosive gas mixture to collect in the tumble dryer.

IMPORTANT: Airflow switch vane must remain closed during operation. If it opens and closes during the drying cycle, this indicates insufficient airflow through the tumble dryer. 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 indicating insufficient airflow.

NOTE: To properly mount the airflow switch bracket, or in case of a load not drying, the airflow switch bracket may need to be checked for proper alignment. Be sure the locator pins are securely in their respective holes before tightening the bracket mounting screws. This will assure proper alignment of the airflow switch arm in the channel of the airflow switch bracket and prevent binding of the arm.

28. Loading Door Catch (120 and 170 Pound Models)

The door catch must be adjusted to have sufficient tension to hold loading door closed against force of load tumbling against it. Proper adjustment is when 0.48-1.03 bar (7-15 pounds) pull is required to open door.

If adjustment is required, refer to *Figure 5* and proceed as follows:

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

29. Loading Door Strike (200 Pound Models)

The loading door strike must be adjusted to have sufficient tension to hold loading door closed against force of load tumbling against it. Proper adjustment is when 8-15 pounds (35.6-66.7 N) pull is required to open door.

If adjustment is required, refer to Figure 5 and proceed as follows:

To adjust, open door, loosen adjustment screws and position strike for desired magnet engagement. Retighten screws.

![Figure 5](image)

1 Door Strike
2 Adjustment Screws

30. Belt Drive

The drive assemblies consist of motors, belts, eyebolts and a step pulley.

The pulley diameters are sized to produce a cylinder speed of 37-39 RPM for 120 pound models or 29-31 RPM for 170 and 200 pound models.

The step pulley assembly is used for speed reduction as well as a means of adjusting belt tension. The pulley mounting plate is attached to the cabinet. The frame mounting plate has vertically slotted holes allowing up and down movement of the step pulley mounting plate for belt adjustment.

Adjust the belt tension as follows:

1. Disconnect electrical power to the tumble dryer before attempting any adjustments to the drive assembly.
2. Loosen pulley mounting plate bolts.
3. Loosen the upper nut on the final drive eyebolt.
4. Rotate the lower nut of the final drive eyebolt clockwise until proper belt tension is achieved.
5. Rotate upper nut clockwise against the lower nut in order to lock it into place.
6. Tighten pulley mounting plate bolts. Recheck belt tension.
7. If necessary, adjust the drive motor belt tension eyebolt using a similar procedure.
8. Adjust blower belt tension on 120 pound 50 Hertz tumble dryers and all 170 pound tumble dryers using a similar procedure.

NOTE: Proper tensions for new belts are measured with a Belt Tension Gauge:

<table>
<thead>
<tr>
<th>Drive Motor</th>
<th>Final Drive</th>
<th>Blower</th>
</tr>
</thead>
<tbody>
<tr>
<td>Initial</td>
<td>After Run-in</td>
<td>Initial</td>
</tr>
<tr>
<td>120</td>
<td>60-70</td>
<td>45-55</td>
</tr>
<tr>
<td>170</td>
<td>60-70</td>
<td>45-55</td>
</tr>
<tr>
<td>200</td>
<td>60-70</td>
<td>45-55</td>
</tr>
</tbody>
</table>

Using a Belt Tension Gauge, the motor belt deflection should be 0.31 inch at five pounds pressure, and final drive belt deflection should be 0.25 inch at five pounds pressure.

Belts should not slip or make any noise when starting up under normal load.
31. 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.
b. Check the gap between the center of the front panel top flange and the cylinder rim. Proper adjustment is when the gap is 8/32 inch ± 3/32 inch. Refer to Figure 6. Perform steps d through i to adjust the cylinder rim/front panel flange clearance.
c. Check the cylinder fore/aft clearance between the inside front of the cylinder and the edge of the front panel flange. Proper adjustment is when the gap is 9/32 inch ± 1/32 inch. Refer to Figure 6. Perform steps j through n to adjust the cylinder fore/aft clearance.

Cylinder Rim/Front Panel Flange Clearance Adjustment
a. Support corner drive guard and remove screws holding corner guard to rear of tumbler.
b. Support drive guard cover and remove screws holding guard to rear of tumbler.
c. Loosen rear bearing mounting screws. Refer to Figure 7.
d. Loosen the locknuts on rear adjustment screws. Refer to Figure 7.
e. Turn the adjusting screws in or out as necessary to obtain proper clearance between cylinder rim and front panel.

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

f. After the cylinder is properly adjusted, tighten the adjusting screw locknuts and the rear bearing mounting screws.
g. Install drive guard cover.

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

Cylinder Fore/Aft Clearance Adjustment
h. Support corner drive guard and remove screws holding corner guard to rear of tumbler.
i. Support drive guard cover and remove screws holding guard to rear of tumbler.
j. Loosen setscrews in the front bearing assembly collar and rear bearing assembly collar. Refer to Figure 7.
k. Move cylinder assembly in or out as necessary to obtain proper clearance between the cylinder and the front panel.
l. After the cylinder is properly adjusted, tighten setscrews in the front and rear bearing assembly collars.
m. Install drive guard cover.
Adjustments

Figure 6

- Inside Front of Cylinder
- Cylinder Rim
- 8/32" ± 3/32"
- 9/32" ± 1/32"
- Fore / Aft Clearance
- Front Panel Flange (Top Shown)
- Cylinder Rim / Front Panel Flange Clearance
32. Drive Belt Tension

Refer to Figure 7.

NOTE: If cylinder belts will be adjusted, service them before drive belt.

120 Pound Models:

NOTE: Belt tension from step pulley to cylinder shaft pulley can be measured to ensure proper installation in one of the following ways:

• Belt Tension Gauge initial reading 70-80 pounds.
• Force to deflect belt .38 inch at midspan with initial tensioning 6.5 pounds.
• Belt Tension Gauge reading after run 55-65 pounds.

170 and 200 Pound Models:

NOTE: Belt tension from cylinder drive motor pulley to step pulley can be measured to ensure proper installation in one of the following ways:

• Belt Tension Gauge initial reading 60-70 pounds.
• Force to deflect belt .38 inch at midspan with initial tensioning 6.0 pounds.
• Belt Tension Gauge reading after run 45-55 pounds.

a. Support corner drive guard and remove screws holding corner guard to rear of tumbler.
b. Support drive guard cover and remove screws holding guard to rear of tumbler.
c. Reinstall drive guard.
d. Loosen the two motor bracket pivot screws. Refer to Figure 7.
e. Turn the adjusting nuts clockwise until proper tension is reached. Refer to Figure 7.
f. Retighten all nuts and screws.
Adjustments

33. Fan Belt Tension
Refer to Figure 8.

120 Pound Models:
NOTE: Belt tension from fan motor pulley to fan shaft pulley can be measured to ensure proper installation in one of the following ways:
• Belt Tension Gauge initial reading 60-70 pounds.
• Force to deflect belt .38 inch at midspan with initial tensioning 7.0 pounds.
• Belt Tension Gauge reading after run 50-55 pounds.

170 and 200 Pound Models:
NOTE: Belt tension from fan motor pulley to fan shaft pulley can be measured to ensure proper installation in one of the following ways:
• Belt Tension Gauge initial reading 75-80 pounds.
• Force to deflect belt .38 inch at midspan with initial tensioning 5.0 pounds.
• Belt Tension Gauge reading after run 60-65 pounds.

Support corner drive guard and remove screws holding corner guard to rear of tumbler.
   a. Support drive guard cover and remove screws holding guard to rear of tumbler.
   b. Loosen the two mounting bracket attaching screws.
   c. Raise or lower eye bolt until proper tension is reached.
   d. Retighten all nuts and screws.
Section 6
Hybrid Timer Control 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.
34. Control Has No Display

Gas, steam and electric heat. Single and three phase supply.

Is there voltage supplied to the unit? NO

YES

Note: Reference voltage to supply neutral.

Is there voltage to the input side of the primary fuse(s)? NO

YES

Is there voltage to the output side of the primary fuse(s)? NO

YES

Is there voltage across the primary side of the transformer? NO

YES

Is there voltage across 2 & 3 of transformer secondary? NO

YES

Is there voltage across terminals H1-3 & H1-1 on hybrid timer? NO

YES

Correct wiring between primary fuse and supply.

Check H6-1 (+) and H6-2 (-) for +5 VDC.

Replace display assembly.

Connect supply voltage and run unit.

Correct wiring between primary fuse and supply.

Replace primary fuse.

Correct wiring between transformer and primary fuse.

Replace transformer.

Correct wiring between hybrid timer and transformer secondary.

Replace hybrid control assembly.
Control Has No Display
35. Display Flashes “dr” With Door Closed

1. Is there voltage between H1-3 & H4-7 on the control? 
   - NO: Replace hybrid control.
   - YES: Proceed to 2.

2. Is there power supplied to the unit? 
   - NO: Plug unit in and run it.
   - YES: Proceed to 3.

3. Is there voltage at input of primary fuses? 
   - NO: Correct wiring between primary fuse and power supply.
   - YES: Proceed to 4.

4. Is there voltage at output side of the primary fuses? 
   - NO: Replace primary fuse(s).
   - YES: Proceed to 5.

5. Is there voltage across the transformer primary? 
   - NO: Replace transformer.
   - YES: Correct wiring between primary fuse and transformer.

6. Is there voltage at the input of the secondary fuse? 
   - NO: Correct wiring between secondary fuse and transformer.
   - YES: Proceed to 7.

7. Is there voltage at output side of secondary fuse? 
   - NO: Replace secondary fuse.
   - YES: Connect wiring between COM and output of secondary fuse.

8. Is there voltage at COM of door switch? 
   - NO: Replace door switch.
   - YES: Proceed to 9.

9. With door closed, is there voltage to NO of door switch? 
   - NO: Replace door switch.
   - YES: Connect wiring between door switch and COM of lint panel switch.

10. Is there voltage at COM of the lint panel switch? 
    - NO: Replace lint panel switch.
    - YES: Correct wiring between lint panel switch and hybrid control.
Display Flashes “dr” With Door Closed
Hybrid Timer Control Troubleshooting

36. Motor Will Not Start/Run

Is there voltage across H4-7 and H4-4 on the electronic control?

YES

NO

Refer to Display Flashes “dr” With Door Closed flowchart.

Is there voltage across H4-3 and H4-4 on the electronic control?

YES

NO

Replace control.

Is there voltage across the coil of the motor control relay?

YES

NO

Correct wiring to coil of motor relay.

NOTE: Please use the appropriate wiring diagram from the following pages.

Is there voltage at the input side of the motor control relay?

YES

NO

Correct wiring between control relay and power supply.

Is there voltage at the output side of motor control relay?

YES

NO

Replace motor control relay.

Is there voltage at the output side of motor control relay?

YES

NO

Replace cylinder motor.

Is there voltage across the lines of the fan motor?

YES

NO

Correct wiring between fan motor and motor control relay.

Is there voltage at the input side of motor control relay?

YES

NO

Correct wiring between terminal 6 of motor control relay and supply.

Is there voltage at the output side of motor control relay?

YES

NO

Correct wiring between cylinder motor and motor control relay.

Is there voltage across the lines of cylinder motor?

YES

NO

Correct wiring between control relay and power supply.

Does the cylinder motor run?

YES

NO

Replace cylinder motor.

Motors are operational.
Hybrid Timer Control Troubleshooting

37. Unit Will Not Heat – Gas

Note: Tests are conducted with unit running and calling for heat.
All voltage checks are referenced to transformer neutral.

- **Is there voltage at H4-1 of hybrid control?**
  - NO: Replace hybrid control.
  - YES: Is there voltage at terminal 13 of motor control relay?
    - NO: Correct wiring between terminal 13 on motor control and H4-1 on hybrid control.
    - YES: Replace motor control relay.

- **Is there voltage at the output side of the cabinet limit?**
  - NO: Replace cabinet limit.
  - YES: Correct wiring between stove limit and cabinet limit.

- **Is there voltage at the input side of the stove limit?**
  - NO: Correct wiring between terminal 2 of the Ignition Control Module (ICM) and stove limit.
  - YES: Replace stove limit.

- **Is there voltage at terminal 14 of motor control relay?**
  - NO: Correct wiring between terminal 3 of fan motor centrifugal switch and terminal 4 of motor control relay.
  - YES: Replace motor.

- **Is there voltage at terminal 3 of fan motor centrifugal switch?**
  - NO: Correct wiring between cabinet limit and terminal 5 of fan motor centrifugal switch.
  - YES: Replace fan motor.

- **Is there voltage to the input side of the cabinet limit?**
  - NO: Correct wiring between cabinet limit and terminal 5 of fan motor centrifugal switch.
  - YES: Replace cabinet limit.
37. Unit Will Not Heat – Gas (continued)

Note: Make sure unit is not in a lock out condition.

Is there voltage at terminal 1 of ICM board?

YES

Replace ICM board.

NO

(11)

Is there voltage across the coils of the gas valve?

YES

Correct wiring between gas valve and ICM board.

NO

(12)

Is there gas flow through the gas valve?

YES

Replace gas valve coils or complete gas valve.

NO

Is there a flame?

YES

Unit operational.

NO

Does the igniter spark?

YES

Replace high voltage ignition cable or igniter.

NO

Replace high voltage ignition cable or igniter.

Please see following page for wiring diagram information.
Unit Will Not Heat – Gas
### 38. Error Codes

<table>
<thead>
<tr>
<th>Display</th>
<th>Definition</th>
<th>Corrective Action</th>
</tr>
</thead>
</table>
| OP      | Open thermistor error. | • Check thermistor. Replace if inoperative.  
• Check wiring between control and thermistor. Refer to wiring diagram for proper wiring.  
• Check control. Replace if inoperative. |
| SH      | Shorted thermistor error. | • Check thermistor. Replace if inoperative.  
• Check wiring between control and thermistor. Refer to wiring diagram for proper wiring.  
• Check control. Replace if inoperative. |
| AF-1    | Airflow switch closed when cycle started. | • Check airflow switch. Replace if inoperative. |
| AF-2    | Airflow switch failed to closed after cycle started. | • Check airflow switch. Replace if inoperative. |
| AF (flashing) | Airflow switch opened/closed 5 or more times in a running cycle. | • Check airflow switch. Replace if inoperative. |
## Section 7
### On Premise Micro Control (RM)
#### Troubleshooting

<table>
<thead>
<tr>
<th>WARNING</th>
</tr>
</thead>
</table>
| 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. Control Has No Display

Is there power supplied to the unit?

Yes

Is there 120 VAC at input of primary fuses?

Yes

Is there 120 VAC at output side of the primary fuses?

Yes

Is there 120 VAC across terminals 1 & 2 of transformer primary?

Yes

Gas and steam heat. Three phase power supply.

Plug unit in and start cycle.

Correct wiring between primary fuse and power supply.

Replace primary fuse(s).

Correct wiring between primary fuse and transformer.

No

No

No

Is there 120 VAC across terminals 1 & 4 of transformer secondary?

Yes

Is there 24 VAC across H3-3 and H3-4 on the control?

Yes

Is the control fuse functional?

Yes

Replace control.

No

Correct wiring between transformer and control.

Replace transformer.

No

Correct wiring between primary fuse and power supply.

Replace transformer.
On Premise Micro Control (RM) Troubleshooting

Control Has No Display
40. Door Open Indicator

- Gas and steam heat. Three phase power supply.
- Reference voltage checks to transformer neutral.

(1) Is there 24 VAC between H2-8 and H2-9?
   Yes: Replace control.
   No: Is there power supplied to the unit?
      Yes: Correct wiring between primary fuses and power supply.
      No: Is there 120 VAC at input of primary fuses?
          Yes: Is there 120 VAC at output side of the primary fuses?
              Yes: Correct wiring between primary fuses and transformer.
              No: Replace secondary fuse.
          No: Replace primary fuse(s).
      No: Correct wiring between secondary fuse and transformer.

(5) Is there 24 VAC across terminals 2 & 3 of transformer secondary?
   Yes: Correct wiring between secondary fuse and transformer.
   No: Replace transformer.

(2) Is there 120 VAC at input of primary fuses?
   Yes: Is there 120 VAC at output side of secondary fuse?
       Yes: Is there 24 VAC at COM of door switch?
           Yes: Continued on next page
           No: Correct wiring between COM and output of secondary fuse.
       No: Correct wiring between primary fuses and transformer.
   No: Replace secondary fuse.

(3) Is there 120 VAC at output side of the primary fuses?
   Yes: Is there 24 VAC at the input of the secondary fuse?
       Yes: Plug unit in and start cycle.
       No: Replace control.
   No: Replace primary fuse(s).

(4) Is there 120 VAC across terminals 1 & 2 of transformer primary?
   Yes: Reference voltage checks to transformer neutral.
   No: Correct wiring between primary fuses and transformer.

(6) Is there 24 VAC at the input of the secondary fuse?
    Yes: Correct wiring between secondary fuse and transformer.
    No: Replace secondary fuse.

(7) Is there 24 VAC at output side of secondary fuse?
    Yes: Correct wiring between secondary fuse and transformer.
    No: Replace transformer.

(8) Is there 24 VAC at COM of door switch?
    Yes: Continued on next page
    No: Correct wiring between COM and output of secondary fuse.
40. Door Open Indicator (continued)

Continued from previous page

(9)

With door closed is there 24 VAC to N.O. of door switch?

Yes

No

Check for proper function of door switch, replace if necessary.

(10)

Is there 24 VAC at COM of lint panel switch?

Yes

Correct wiring between N.O. on door switch and COM on lint panel switch.

No

(11)

Is there 24 VAC at N.O. of lint panel switch with lint panel closed?

Yes

Correct wiring between H2-8 of electronic control and N.O. of lint panel switch.

No

Check lint panel switch for proper operation, replace if necessary.

Please see following page for wiring diagram information.
Door Open Indicator

TMB2319S
On Premise Micro Control (RM) Troubleshooting

41. Motor Will Not Start/Run

Gas and steam heat. Three phase power supply.

Motor Will Not Start/Run

(1) Is there voltage between H2-7 and H3-4?
   No: Replace control.
   Yes:

(2) Is there 24 VAC across the coil of the motor control relay?
   No: Correct wiring to coil of motor relay.
   Yes:

Note: For high voltage three phase supply (200 volts or higher), the motor is supplied by L1, L2, L3 through the motor contactor terminals T1, T2, T3. Make the appropriate adjustments when doing voltage checks.

(3) Is there supply voltage at L1-L2, L2-L3 and L1-L3 at the motor contactor?
   No: Correct wiring between L1, L2, L3 and power supply.
   Yes:

(4) Is there supply voltage across T1-T2, T2-T3 and T1-T3 on the motor contactor?
   No: Replace motor control relay.
   Yes:

(5) Is there supply voltage between L1-L2, L2-L3 and L1-L3 of motor?
   No: Correct wiring between motor and motor contactor.
   Yes: Replace motor.

Note: Test conducted with vend price satisfied and start button pressed.
42. Unit Will Not Heat – Gas/Steam

Note: Tests are conducted with unit running and calling for heat. All voltage checks are referenced to transformer neutral.

Unit Will Not Heat – Gas

Is there voltage at H2-5 and H3-4 of control?  
Yes: Correct wiring between airflow switch and cabinet limit.  
No: Replace the airflow switch and cabinet limit.

Is there voltage to the common of the airflow switch?  
Yes: Correct wiring between airflow switch and cabinet limit.  
No: Check for proper operation of airflow switch. Replace if necessary.

Is there voltage to the N.O. terminal of the airflow switch?  
Yes: Correct wiring between H2-5 and motor contactor.  
No: Replace motor contactor.

Is there voltage on BRN wire on motor contactor?  
Yes: Correct wiring between H2-5 and motor contactor.  
No: Replace the motor contactor.

Is there voltage at ORG/WHT wire on motor contactor?  
Yes: Replace motor contactor.  
No: Replace the motor contactor.

Is the thermistor operational?  
Yes: Replace control.  
No: Replace the thermistor.

Is there voltage to terminal 3 of the motor contactor?  
Yes: Correct wiring between motor terminal 3 and motor contactor.  
No: Check motor for proper operation. Replace if necessary.

Is there voltage at terminal 5 of the fan motor?  
Yes (Gas): Correct wiring between cabinet limit and terminal 5 of fan motor.  
Yes (Steam): See next page  
No: Check cabinet limit for proper operation. Replace if necessary.

Is there voltage to the input of the cabinet limit?  
Yes: Correct wiring between cabinet limit and normally open terminal of the airflow switch.  
No: Check cabinet limit for proper operation. Replace if necessary.

Is there voltage to terminal 3 of the motor contactor?  
Yes: Correct wiring between cabinet limit and terminal 5 of fan motor.  
No: Replace the motor contactor.

Is there voltage to the input of the stove limit?  
Yes: Correct wiring between stove limit and normally open terminal of the airflow switch.  
No: Replace the stove limit.

Continued on next page
42. Unit Will Not Heat – Gas/Steam (continued)

Is there voltage to the output side of the stove limit?

Yes  (12)

Is there voltage to terminal 2 of the Ignition Control Module (ICM)?

Yes

Correct wiring between terminal 2 of ICM and stove limit.

No

Is there voltage at terminal 1 of ICM board?

Yes

Note: Make sure unit is not in a lockout condition.

Is there voltage across the coils of the gas valve?

Yes

Is there gas flow through the gas valve?

Yes

Replace gas valve coils or complete gas valve.

No

Does the igniter spark?

Yes

Continued from previous page

No

Replace high voltage ignition cable, igniter or ICM board.

(11)

Is there voltage to terminal 2 of ICM?

Yes

Replace ICM board.

No

Correct wiring between gas valve and ICM board.

(13)

Is there voltage at terminal 1 of ICM board?

Yes

(14)

Is there voltage across the coils of the gas valve?

No

Does the igniter spark?

Yes

Continued from previous page

No

Replace high voltage ignition cable, igniter or ICM board.

Is there a flame?

Yes

Unit operational.

No

Correct wiring between steam valve coil and motor.

Is there 24 VAC across the coil of the steam valve?

Yes

Does the steam valve coil have continuity?

Yes

Replace the steam valve coil.

No

Connect the steam supply.

No

Is the steam supply functional?

Yes

Replace or rebuild the steam valve.

No

Connect the steam supply.

Yes (Gas)

Yes (Steam)

(10)

Please see following page for wiring diagram information.
On Premise Micro Control (RM) Troubleshooting

Unit Will Not Heat – Gas/Steam

[Diagram of a control system with labeled parts and connections]
To reduce the risk of electric shock, fire, explosion, serious injury or death:
• Disconnect electric power to the dryer(s) before servicing.
• Close gas shut-off valve to gas dryer(s) before servicing.
• Never start the dryer(s) with any guards/panels removed.
• Whenever ground wires are removed during servicing, these ground wires must be reconnected to ensure that the dryer is properly grounded.

43. Error Codes

**OP** - Indicates physical “open” in the thermistor circuit. Possible causes are: 1) thermistor, 2) wiring between control and thermistor, 3) control.

**SH** - Indicates a “short” in the thermistor circuit. Possible causes are: 1) shorted thermistor, 2) a short in the wiring between control and thermistor, 3) control.

<table>
<thead>
<tr>
<th>Display</th>
<th>Definition</th>
<th>Corrective Action</th>
</tr>
</thead>
</table>
| OP      | Indicates an open circuit in the thermistor. | • Check thermistor. Replace if inoperative.  
• Check wiring between control and thermistor. Refer to wiring diagram for proper wiring.  
• Check control. Replace if inoperative. |
| SH      | Indicates a short circuit in the thermistor. | • Check thermistor. Replace if inoperative.  
• Check wiring between control and thermistor. Refer to wiring diagram for proper wiring.  
• Check control. Replace if inoperative. |
Section 8
LED OPL and UniLinc Troubleshooting
Models with RE and RU Control Suffixes

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

NOTE: The UniLinc’s Inputs and Outputs Menu can be used to check the current status of inputs as well as control the state of any output.

Both UniLinc and LED OPL Controls contain a comprehensive test cycle that can be used to verify machine configuration and functionality.

Diagnostic LEDs
Before troubleshooting the following errors, verify that the front-end control is trying to turn the output on by checking for the corresponding red diagnostic LED on the Input/Output (I/O) Board. Diagnostic LEDs can be found for the following outputs:
• Forward Motor
• Reverse Motor
• Fan Motor
• Damper Motor
• External Alarm
• Heater

In addition, the I/O Board has a LED labeled “+5VDC” that indicates whether the I/O Board is powered. When lit, the I/O Board and front-end control should both be powered. If the LED does not light and both are powered, verify that the loading door and lint door are closed, and, if checking heater-related errors, that the heat interlock chain is closed (AirFlow Switch, Fan Contactor, Fan Centrifugal Switch, Cabinet Limit and Stove Limit). If the LED still does not light, check the connection between the front-end control and the I/O Board. If they are connected properly and voltage is present at the pin corresponding to the error with the ground pin on the same connector, the I/O Board must be replaced. If voltage is not present, the front-end control must be replaced.
44. No Fan Motor Rotation

NOTE: All mechanical checks should be performed prior to starting the electrical checks. Ensure the belt(s), basket, idler and pulleys are rotating freely.

1. Is there 24 volts AC at H6-1 to H6-9?
   - No: Check Transformer and Fuse F3.
   - Yes: Is there 24 volts AC at H6-5 to H6-11?
     - No: Check incoming power and wiring. Replace or repair as required.
     - Yes: Is there line voltage on the line side of the contactor?
       - No: Replace incoming power and wiring. Replace or repair as required.
       - Yes: Is there 24 volts AC at contactor A1 to A2 (or Brown/Red to White)?
         - No: Replace or repair harness.
         - Yes: Is contactor energizing?
           - No: Replace contactor.
           - Yes: Is there 5 volts DC at H3-1 to H3-11 with contactor commanded to close and 0 volts DC with contactor not commanded?
             - No: Check control harness H3 and front-end control (AP2). Replace as required.
             - Yes: Check control harness H3 and I/O board (API). Replace or repair as required.
2. Is there 24 volts AC at H6-5 to H6-11?
   - No: Check Transformer and Fuse F3.
   - Yes: Is there 24 volts AC at contactor A1 to A2 (or Brown/Red to White)?
     - No: Replace or repair harness.
     - Yes: Is contactor energizing?
       - No: Replace contactor.
       - Yes: Is there line voltage on the line side of the contactor?
         - No: Replace contactor.
         - Yes: Is there line voltage at the motor?
           - No: Repair or replace wiring harness.
           - Yes: Replace contactor.

NOTE: The following checks are DC voltage checks. CAUTION: Always power down the machine PRIOR to disconnecting or connecting the H3 harness. Once harness is disconnected, you can power up the machine for troubleshooting. Failure to do so may damage the front-end control.

NOTE: The following checks are AC voltage checks and should be equal to the line voltage of the machine. Refer to the serial plate of the machine for correct line voltage. The machine’s motor(s) may be single or three phase.
LED OPL and UniLinc Troubleshooting

No Fan Motor Rotation (Drawing 1 of 2)

NOTE: The door and lint door must be closed for voltage to be present at the fan.
NOTE: The door and lint door must be closed for voltage to be present at the fan.
45. No Drive Motor Rotation

NOTE: This is for machines with the reversing option only. Each step has a F (Forward) or R (Reverse) representing the direction of rotation. Ensure the cycle is programmed for either reversing or non-reversing.

NOTE: All mechanical checks should be performed prior to starting the electrical checks. Ensure the belt(s), basket, idler and pulleys are rotating freely.

NOTE: The following checks are DC voltage checks. CAUTION: Always power down the machine PRIOR to disconnecting or connecting the H3 harness. Once harness is disconnected, you can power up the machine for troubleshooting. Failure to do so may damage the front-end control.

NOTE: The H3 harness will need to remain connected during this test.

NOTE: The following checks are AC voltage checks and should be equal to the line voltage of the machine. Refer to the serial plate of the machine for correct line voltage. The machine’s motor(s) may be single or three phase.
No Drive Motor Rotation (Drawing 1 of 2)

NOTE: The door and lint door must be closed for voltage to be present at the forward and reverse outputs.
LED OPL and UniLinc Troubleshooting

No Drive Motor Rotation (Drawing 2 of 2)

NOTE: The door and lint door must be closed for voltage to be present at the forward and reverse outputs.
46. Stove and Cabinet Limit Errors

Unilinc Error Display: Stove and Cabinet Limit Errors
LED OPL Error Display: E Cab
E SL
E SL2

NOTE: The machine must currently be trying to heat with airflow switch closed, fan motor contactor engaged and fan motor centrifugal switch closed before checking the status of the cabinet, stove and stove 2 limits.

NOTE: The machine must currently be trying to heat with airflow switch closed, fan motor contactor engaged and fan motor centrifugal switch closed before checking the status of the cabinet, stove and stove 2 limits.

NOTE: Not all machines have the stove limit or the secondary stove limit switch. Please refer to your machine's wiring diagram. Also, some machines have manual reset thermostats; these must be reset prior to attempting the troubleshooting procedures.

NOTE: Steam model machines will utilize a jumper from pins H2-8 to H2-1.

(1) Is there 24 volts AC at H6-1 to H6-9?
   No
   Check Transformer and Fuse F3.
   NOTE: If the voltage is present but lower than 24 volts AC, ensure the correct transformer configuration jumper is installed.
   Yes

(2) Is there 24 volts AC at H2-9 to H6-9?
   No
   Replace I/O Board (AP1).
   Yes

(3) Is there 24 volts AC at H2-2 to H6-9?
   No
   Replace I/O Board (AP1).
   Yes

(4) Is there 24 volts AC at H2-8 to H6-9?
   No
   Check harness and cabinet limit switch. Repair or replace as required.
   Yes

(5) Is there 24 volts AC at H2-1 to H6-9?
   No
   Replace I/O Board (AP1).
   Yes

(6) Is there 24 volts AC at H2-7 to H6-9?
   No
   Replace I/O Board (AP1).
   Yes

(7) Is there 24 volts AC at H2-11 to H6-9?
   No
   Check harness and secondary stove limit switch. Repair or replace as required.
   Yes

(8) Is there 5 volts DC at H3-20 to H3-11 with stove limit circuit open and 0 volts DC with switch closed?
   No
   Check control harness H3. Replace harness or I/O Board (AP1) as required.
   Yes

(9) Is there 5 volts DC at H3-10 to H3-11 with stove limit circuit open and 0 volts DC with switch closed?
   No
   Check control harness H3. Replace harness or I/O Board (AP1) as required.
   Yes

(10) Is there 5 volts DC at H3-9 to H3-11 with cabinet limit circuit open and 0 volts DC with switch closed?
    No
    Check control harness H3. Replace harness or I/O Board (AP1) as required.
    Yes

(11) Replace front-end control (AP2).
Stove Cabinet Limit Errors
47. No Display

NOTE: On the UniLinc LCD-equipped machines, verify the contrast is set correctly prior to troubleshooting.

(1) Is there 24 volts AC at H1-1 to H1-3?
   - No: Check Transformer and Fuse F4.
   - Yes: Is there 24 volts AC at H1-2 to H1-4?

   NOTE: If the voltage is present but lower than 24 volts AC, ensure the correct transformer configuration jumper is installed.

(2) Is there 24 volts AC at H1-2 to H1-4?
   - No: Replace I/O Board (AP1).
   - Yes: Is there 24 volts AC at H8-1 to H8-3?

   NOTE: The pins H1-2 and H1-4 on I/O Board that connect to pins H8-1 and H8-3 on the front-end control only provide 24 volts AC to the front-end control's network circuitry.

(3) Is there 24 volts AC at H8-1 to H8-3?
   - No: Replace or repair harness.
   - Yes: Is there 29 - 33 volts DC at H3-14 to H3-11?

   NOTE: The following checks are DC voltage checks.

(4a) Is there 29 - 33 volts DC at H3-13 to H3-11, closest to the front-end control (AP2)?
   - No: Verify correct transformer configuration jumper is installed. Check harness and I/O Board (AP1). Replace as necessary.
   - Yes: CAUTION: Always power down the machine PRIOR to disconnecting or connecting the H3 harness. Once disconnected, you can power up the machine for troubleshooting. Failure to do so may damage the front-end control.

(4b) Is there 29 - 33 volts DC at H3-14 to H3-11?
   - No: Replace front-end control (AP2).
   - Yes: Is there 5 volts DC at H3-12 to H3-11?

   - No: Replace front-end control (AP2).
   - Yes: Replace front-end control (AP2).
LED OPL and UniLinc Troubleshooting

No Display
48. Airflow Errors

**UniLinc Error Display:** Airflow Switch Sensed Closed While Not In Run Mode
Airflow Switch Does Not Close After Cycle Started
Airflow Switch Bounces During A Running Cycle

**LED OPL Error Display:** E AF1  
E AF2  
E AF

NOTE: Check airflow switch for proper mechanical operation; ensure there is no lint or other items interfering with the proper operation.

NOTE: The airflow switch is required to be open prior to the beginning of the cycle. The switch is also required to close within the cycle.

1. Is there 24 volts AC at H6-1 to H6-9?  
   - No: Check Transformer and Fuse F3.  
     - NOTE: If the voltage is present but lower than 24 volts AC, ensure the correct transformer configuration jumper is installed.
   - Yes: Continue.

2. Is there 24 volts AC at H2-12 to H6-9?  
   - No: Replace I/O Board (AP1).  
   - Yes: Continue.

3. Is there 24 volts AC at H2-5 to H6-9 with airflow switch closed?  
   - No: Check harness and airflow switch. Repair or replace as required.  
     - NOTE: The following checks are DC voltage checks.
   - Yes: Continue.

4. Is there 5 volts DC at H3-7 to H3-11 with switch open and 0 volts DC with switch closed?  
   - No: Check control harness H3 and I/O Board (AP1). Replace as required.
   - Yes: Replace front-end control (AP2).
   - CAUTION: Always power down the machine PRIOR to disconnecting or connecting the H3 harness. Once disconnected, you can power up the machine for troubleshooting. Failure to do so may damage the front-end control.
49. Fan Motor Centrifugal Switch Error

UniLinc Error Display: Fan Motor Centrifugal Switch Error
LED OPL Error Display: E FnCs

NOTE: Before performing these checks, the airflow switch must be pulled in, the fan motor contactor must be closed, and the motor must be running.

(1) Is there 24 volts AC at H6-1 to H6-9?
   Yes
   No
   Check Transformer and Fuse F3.
   NOTE: If the voltage is present but lower than 24 volts AC, ensure the correct transformer configuration jumper is installed.

(2) Is there 24 volts AC at H2-10 to H6-9?
   Yes
   No
   Replace I/O Board (AP1).

(3) Is there 24 volts AC at H2-3 to H6-9 with fan motor running?
   Yes
   No
   Check harness and wire connections at the motor. Repair or replace as necessary.
   NOTE: The following checks are DC voltage checks.

(4) Is there 5 volts DC at H3-19 to H3-11 with motor off and switch open and 0 volts DC with motor running and switch closed?
   Yes
   No
   Check control harness H3 and I/O Board (AP1). Replace as required.
   CAUTION: Always power down the machine PRIOR to disconnecting or connecting the H3 harness. Once disconnected, you can power up the machine for troubleshooting. Failure to do so may damage the front-end control.

Replace front-end control (AP2.)
LED OPL and UniLinc Troubleshooting

Fan Motor Centrifugal Switch Error
50. Close Door Indication

NOTE: Before proceeding, check the lint door, loading doors and switches for proper mechanical operation.

1. Is there 24 volts AC at H6-1 to H6-9?
   - Yes
   - No
     - Check Transformer and Fuse F3.

2. Is there 24 volts AC at H6-8 to H6-9?
   - Yes
   - No
     - Check harness and lint door switch. Repair or replace as required.

3. Is there 24 volts AC at H6-2 to H6-9?
   - Yes
   - No
     - Replace I/O Board (AP1).

4. Is there 24 volts AC at H6-3 to H6-9 with loading door and lint doors closed?
   - Yes
   - No
     - Replace I/O Board (AP1).

5. Is there 24 volts AC at H6-4 to H6-9 with both doors closed?
   - Yes
   - No
     - Check harness and lint door switch. Repair or replace as required.

6. Is there 24 volts AC at H6-4 to H6-9 with both doors closed?
   - Yes
   - No
     - Replace I/O Board (AP1).

7. Is there 24 volts DC at H3-6 to H3-11 closest to the front-end control with loading door open and 0 volts DC with loading door closed?
   - Yes
   - No
     - Replace front-end control (AP2).

NOTE: The following checks are DC Voltage checks.

CAUTION: Always power down the machine PRIOR to disconnecting or connecting the H3 harness. Once disconnected, you can power up the machine for troubleshooting. Failure to do so may damage the front-end control.

NOTE: Before proceeding, check the lint door, loading doors and switches for proper mechanical operation.
51. Moisture Sensor Error

UniLinc Error Display: Moisture Sensor Error
LED OPL Error Display: EnoiST

NOTE: Before troubleshooting the Moisture Sensor Error, run the Moisture Sensor Tests found in Table 5.

NOTE: All testing must be done with an empty basket. Use the orange test jumper from Part No. 70468901 to assist in troubleshooting.

NOTE: Test procedures should be verified on each insulated baffle independently.

NOTE: Loose or cut wires can cause intermittent shorts or opens. If this condition is suspected, a close inspection of the wiring harnesses is required. Remove the basket for a proper wire harness inspection.

After disconnecting the H5 connector, is there any resistance into the wire harness? (1)

If less than 2 ohms, verify correct dipswitch settings and perform diagnostic test cycle. (4)

After removing 3 screws from slip ring assembly, is there any resistance at bullet connector to trunnion shaft? (3)

Verify connections on both ends of slip ring assembly. Replace as required.

Remove basket and look for short between basket and each insulated baffle. Repair or replace wiring harness as necessary.

After disconnecting 2-wire slip ring harness located at rear of trunnion shaft, is there any resistance into slip ring harness? (2)

Yes

No

After disconnecting the 2-wire slip ring harness located at rear of trunnion shaft, is there resistance into the slip ring harness? (5)

Yes

No

After disconnecting the 2-wire slip ring harness located at rear of trunnion shaft, is there resistance into the slip ring harness? (6)

Yes

No

Remove basket and repair or replace wiring harness.
Troubleshooting the Moisture Sensor Circuit

WARNING

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

NOTE: Troubleshooting must be done with the machine basket empty.

52. Troubleshooting at the Control

1. On the control board, unplug the harness from header H5 (Refer to Figure 9).

2. Insert ohm meter probes into pins 1 and 2 of the harness. If the metered value is infinite resistance, open load (OL), proceed to step 3. If not, proceed to Paragraph 53.

3. Create a direct short between machine basket and moisture sensing baffle/ground using test jumper (Refer to Figure 10). If metered value is less than 1 ohm, circuit is functioning properly; double-check machine configuration and cycle programming. If 1 ohm or greater, proceed to Paragraph 53.
LED OPL and UniLinc Troubleshooting

1 Basket
2 Test Jumber
3 Moisture Sensing Baffle

Figure 10
53. Troubleshooting From Control to Slip Ring Assembly

1. At the control, unplug harness at header H5 (Refer to Figure 9).
2. At the slip ring assembly, unplug the moisture sensing harness on the control side of the slip ring assembly (Refer to Figure 11).

3. The harness from the control leads into a junction panel before reaching the slip ring assembly. Inspect junction panel for intermittent connections or unplugged harnesses (Refer to Figure 12).
4. An additional harness connection exists between the junction panel and the slip ring assembly. Inspect connection for intermittent connections or unplugged harness.

5. Insert ohm meter probes into pins 1 and 2 of the harness unplugged from H5. If the metered value is infinite resistance, open load (OL), proceed to Step 6. If not, replace harness and return to Paragraph 52.

6. Create a direct short between pin 1 and 2 of the moisture sensing harness on the control side of the slip ring assembly (Refer to Figure 11). If the metered value is less than 1 ohm, proceed to Paragraph 54. If 1 ohm or greater, replace harness and return to Paragraph 52.
54. Troubleshooting At Slip Ring Assembly

1. At the slip ring assembly, unplug the slip ring assembly harness on the control side of the slip ring assembly (Refer to Figure 11).

2. Remove the three (3) screws holding the slip ring assembly to basket shaft.

3. Carefully disconnect the white wire of the slip ring assembly from the set-screw on the basket shaft.

4. Carefully disconnect the black wire of the slip ring assembly from the connector in the basket shaft.

5. Connect one ohm meter probe to the black wire on the basket side of the slip ring assembly, and connect the other ohm meter probe to the black wire of the slip ring assembly harness. If the metered value is less than 1 ohm, proceed to Step 6. If 1 ohm or greater, replace slip ring assembly and return to Paragraph 52.

6. Connect one ohm meter probe to white wire on the basket side of the slip ring assembly, and connect the other ohm meter probe to the white wire of the slip ring assembly harness. If the metered value is less than 1 ohm, proceed to Paragraph 55. If 1 ohm or greater, replace slip ring assembly and return to Paragraph 52.

55. Troubleshooting From Slip Ring Assembly to Moisture Sensing Baffle and Basket

1. Remove three (3) screws holding slip ring assembly to basket shaft.

2. Carefully disconnect the white wire of the slip ring assembly from the set-screw on the basket shaft.

3. Carefully disconnect the black wire of slip ring assembly from the connector in the basket shaft.

4. Connect one ohm meter probe to the connector in the basket shaft. Connect the other ohm meter probe to the basket shaft itself. If the metered value is infinite resistance, open load (OL), proceed to Step 5. If not, remove machine basket and proceed to Paragraph 56.

5. Create a direct short between basket and moisture sensing baffle (Refer to Figure 10).

6. Connect one ohm meter probe to the connector in the basket shaft. Connect the other ohm meter probe to the basket shaft itself. If the metered value is less than 1 ohm, circuit is functioning properly; double-check machine configuration and cycle programming. If 1 ohm or greater, remove machine basket and proceed to Paragraph 56.

56. Troubleshooting from Basket Shaft to Moisture Sensing Baffle with Machine Basket Removed

1. Disconnect and remove slip ring assembly before removing machine basket.

2. Remove machine basket.
LED OPL and UniLinc Troubleshooting

3. Connect one ohm meter probe to the connector in the basket shaft (Refer to Figure 13).

4. Connect the other ohm meter probe to one of the gray wire harness terminals on the back end of the machine basket. If the metered value is less than 1 ohm, proceed to Step 5. If 1 ohm or greater, replace harness and return to Paragraph 52.

5. Connect one ohm meter probe to the connector in the basket shaft.

6. Connect the other ohm meter probe to the other gray wire harness terminal on the back end of the machine basket. If the metered value is less than 1 ohm, proceed to Step 7. If 1 ohm or greater, replace harness and return to Paragraph 52.

7. Connect one ohm meter probe to the connector in the basket shaft.

8. Connect the other ohm meter probe to one of the moisture sensing baffles (refer to Figure 10). If the metered value is less than 1 ohm, proceed to Step 9. If 1 ohm or greater, proceed to Paragraph 57.

9. Connect one ohm meter probe to the connector in the basket shaft.

10. Connect the other ohm meter probe to the other moisture sensing baffle. If the metered value is less than 1 ohm, circuit is functioning properly; double-check machine configuration and cycle programming. If 1 ohm or greater, proceed to Paragraph 57.

57. Troubleshooting at the Moisture Sensing Baffles with Machine Basket Removed

1. Disassemble moisture sensing baffle and inspect for lint buildup and foreign objects. Verify wire harness connections.

2. Disassemble other moisture sensing baffle and inspect for lint buildup and foreign objects. Verify wire harness connections.

3. Double-check machine configuration and cycle programming.
58. Fan Motor Contactor Error

UniLinc Error Display: Fan Motor Contactor Error
LED OPL Error Display: E FCon

NOTE: Before performing these checks, the airflow switch must be pulled in, and the motor must be running.

(1) Is there 24 volts AC at H6-1 to H6-9?

No → Check Transformer and Fuse F3.

Yes → (2) Is there 24 volts AC at H2-6 to H6-9?

No → Replace I/O Board (AP1).

Yes → (3) Is there 24 volts AC at H2-4 to H6-9 with fan motor running?

No → Check harness and wire connections at the motor contactor. Repair or replace as required.

Yes → (4) Is there 5 volts DC at H3-8 to H3-11 with motor contactor not engaged and 0 volts DC with motor contactor engaged?

No → Check control harness H3 and I/O Board (AP1). Replace as required.

Yes → Replace front-end control (AP2).

CAUTION: Always power down the machine PRIOR to disconnecting or connecting the H3 harness. Once disconnected, you can power up the machine for troubleshooting. Failure to do so may damage the front-end control.

NOTE: The following checks are DC voltage checks.

NOTE: If the voltage is present but lower than 24 volts AC, ensure the correct transformer configuration jumper is installed.
Fan Motor Contactor Error
59. Rotation Sensor Error

UniLinc Error Display: Rotation Sensor Error
LED OPL Error Display: E rot

1. Is the gap from the pulley to sensor less than 1/4 inch?
   - No: Adjust the gap to less than 1/4 inch.
   - Yes: NOTE: The following checks are DC voltage checks.

2. Is there a constant 12 volts of DC at H6-1 to H6-3?
   - No: Replace harness and/or sensor. If still not present, replace front-end control (AP2).
   - Yes: While turning the basket by hand slowly, is there 12 volts DC at H6-3 to H6-2 when the pulley spoke is in front of sensor and 0 volts DC as pulley spoke clears sensor?

3. No: Replace harness and/or sensor. If still not present, replace front-end control (AP2).
   - Yes: Replace harness and/or sensor. If still not present, replace front-end control (AP2).
LED OPL and UniLinc Troubleshooting

Rotation Sensor Error

![Diagram of Rotation Sensor Error](TM823696)
60. Shorted or Open Thermistor

UniLinc Error Display: Shorted Thermistor
Open Thermistor

LED OPL Error Display: ESH
EoP

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Is there approximately 50k ohms of resistance at 77°F across H7-1 and H7-2?

Yes

NOTE: This resistance will vary with cabinet air temperature: the higher the temperature, the lower the resistance.

Replace front-end control (AP2).

No

Check each wire for possible ground fault. Replace temperature sensor and/or harness.

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Shorted or Open Thermistor
61. Fuses and Transformer Configuration Jumper

Check F3 and F4 fuses and verify the jumper. Jumper options shown below.
62. Dip Switch/Harness Index Mismatch

Verify the dip switches are in the correct position and the jumper harness is installed on front-end control (AP2).
63. Electronic Control Testing Models with RE Control Suffix

This feature allows the owner to run diagnostic tests on various tumble dryer operations without servicing the tumble dryer. The tests that are available are shown in Table 2.

For an overview of the manual diagnostic test feature, refer to the flowchart on the following page.

How to Enter Testing Feature

2. Press the Up (↑) or the Down (↓) keypad until “’d ’” appears.
3. Press the Start (/¬) keypad. Display will change to “d5oFt” indicating the control software version number test.
4. Press the Up (↑) or the Down (↓) keypad to scroll through the diagnostic test options.

How to Start Tests

To start a diagnostic test, refer to the quick reference chart below (Table 2). Press the Start (/¬) keypad when the desired test is displayed. For detailed information on each test, read the appropriate description.

How to Exit Testing Feature

Press the Back (↵) keypad. The display will return to Idle Mode.

<table>
<thead>
<tr>
<th>Display</th>
<th>Diagnostic Mode</th>
</tr>
</thead>
<tbody>
<tr>
<td>“d5oFt”</td>
<td>Control Software Version</td>
</tr>
<tr>
<td>“door”</td>
<td>Loading Door Status</td>
</tr>
<tr>
<td>“dl int”</td>
<td>Lint Door Status</td>
</tr>
<tr>
<td>“dHEAt”</td>
<td>Heater Interlock Test</td>
</tr>
</tbody>
</table>
| “FCorHH”     | Fan Motor Contactor Status (HH represents input status, open “OP” or closed “CL”)
| “FnCSHH”     | Fan Motor Centrifugal Switch Status (HH represents input status, open “OP” or closed “CL”)
| “CRb HH”     | Cabinet High Limit Thermostat Status (HH represents input status, open “OP” or closed “CL”)
| “SL HH”      | Stove High Limit Thermostat 1 Status (HH represents input status, open “OP” or closed “CL”)
| “SL 2 HH”    | Stove High Limit Thermostat 2 Status (HH represents input status, open “OP” or closed “CL”)
| “dIP”        | DIP Switch Status                                    |
| “dLcnR”      | ICM Alarm Status                                     |
| “dLcnS”      | ICM Reset Test                                       |
| “dELr n”     | External Alarm Test                                  |
| “dDRn”       | Dryer On Temperature Test                            |
| “dHEr”       | Thermistor Temperature Test                          |
| “dCF2”       | Machine Config #2 Display                            |
| “dCF3”       | Machine Config #3 Display                            |
| “dAFS”       | Airflow Switch Test                                  |
| “dFRn”       | Fan Motor Test                                       |
| “ddRnPr”     | Damper Motor Test*                                   |
| “dEvSE”      | Reverse Motor Test*                                  |
| “dRbRL”      | Rotation Sensor Test*                                |
| “dRes”       | Moisture Sensor Test (Shorted test jumper)*          |
| “dRes 2”     | Moisture Sensor Test (Resistance test jumper)*       |

* = Tests only shown if enabled by the DIP switch configuration.

Table 2
To enter a diagnostic test, press the Start (⟨ SPACE ⟩) keypad. To exit, press the Back (⟨ END ⟩) keypad.

**Control Software Version Number Test**

**Loading Door Status**

**Lint Door Status**

**Heater Interlock Test**

**DIP Switch Status**

**ICM Alarm Status**

**ICM Reset Test**

**External Alarm Test**

**Dryer On Temperature Test**

**Thermistor Temperature Test**

**Machine Config #2 Display**

**Machine Config #3 Display**

**Airflow Switch Test**

**Fan Motor Test**

**Damper Motor Test**

**Reverse Motor Test**

**Rotation Sensor Test**

**Moisture Sensor Test (Shorted)**

**Moisture Sensor Test (Resistance)**

**Fan Motor Contactor Status**

**Fan Motor Centrifugal Switch Status**

**Cabinet High Limit Thermostat Status**

**Stove High Limit Thermostat 1 Status**

**Stove High Limit Thermostat 2 Status**
Diagnostic Test Descriptions

Control Software Version Number Test “d5oFt”

This option displays the control software version number. To start test, control must be in the Testing Mode. Refer to “How to Enter Testing Feature” at the beginning of this section.

To enter, press the Start ( ) keypad. The display will show “$HH” where “HH” is the software version number.

To exit the Software Version Number Test, press the Back ( ) keypad. The control will return to the testing mode.

Loading Door Test “ddoor”

This option tests the loading door switch. To start test, control must be in the Testing Mode. Refer to “How to Enter Testing Feature” at the beginning of this section.

To enter, press the Start ( ) keypad. The display will show “door OP” when the loading door switch is open and “door CL” when the loading door switch is closed.

The loading door switch has to be closed or open for at least one second for the control to register the switch as closed or open.

To exit the Loading Door Test, press the Back ( ) keypad. The control will return to the testing mode.

Lint Door Test “dLt nLt”

This option tests the lint door switch. To start test, control must be in the Testing Mode. Refer to “How to Enter Testing Feature” at the beginning of this section.

To enter, press the Start ( ) keypad. The display will show “L nLt OP” when the lint door switch is open and “L nLt CL” when the lint door switch is closed.

The lint door switch has to be closed or open for at least one second for the control to register the switch as closed or open.

NOTE: Loading door must be closed while testing lint door.

To exit the Lint Door Test, press the Back ( ) keypad. The control will return to the testing mode.

Heater Interlock Test “dHEARt”

While this test is running, the control will show the status of the following inputs for two seconds each. The control will continue scrolling through the input status displays until the test is aborted.

To start test, the control must be in the Testing Mode. Refer to “How to Enter Testing Feature” at the beginning of this section.

To enter, press Start ( ). Refer to five sections below for more details on individual statuses.

NOTE: These switches are tested in sequence. If one switch is sensed open, the rest will be open as well. For example, if the fan motor contactor switch is open, all of the switches will be open.

To exit the test, press the Back ( ) keypad. The control will return to the testing mode.

Fan Motor Contactor Switch “FC0nHH”

The display will show “FC0nOP” if the switch is sensed open and “FC0nCL” if the switch is sensed closed.

Fan Motor Centrifugal Switch “FnC5HH”

The display will show “FnC5OP” if the switch is sensed open and “FnC5CL” if the switch is sensed closed.

Cabinet High Limit Thermostat “CRb HH”

The display will show “CRb OP” if sensed open for at least 1.5 seconds and “CRb CL” if sensed closed for at least one second.

Stove High Limit Thermostat 1 “5L HH”

The display will show “5L OP” if sensed open for at least 1.5 seconds and “5L CL” if sensed closed for at least one second.

Stove High Limit Thermostat 2 “5L2 HH”

The display will show “5L2 OP” if sensed open for at least 1.5 seconds and “5L2 CL” if sensed closed for at least one second.
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Dip Switch Status “ddP”

The control will show the displays in Table 3 according to the DIP switch configuration. The control will show which switches are in the ON position. For example, to verify that DS3, DS5 and DS7 are in the ON position, the display will show “d5c0b4” (DS3=4, DS5=16 and DS7 = 64, 4+16+64 =84).

<table>
<thead>
<tr>
<th>DS8</th>
<th>DS7</th>
<th>DS6</th>
<th>DS5</th>
<th>DS4</th>
<th>DS3</th>
<th>DS2</th>
<th>DS1</th>
<th>Display</th>
</tr>
</thead>
<tbody>
<tr>
<td>OFF</td>
<td>OFF</td>
<td>OFF</td>
<td>OFF</td>
<td>OFF</td>
<td>OFF</td>
<td>ON</td>
<td>OFF</td>
<td>d5c00d</td>
</tr>
<tr>
<td>OFF</td>
<td>OFF</td>
<td>OFF</td>
<td>OFF</td>
<td>OFF</td>
<td>OFF</td>
<td>OFF</td>
<td>ON</td>
<td>d5c001</td>
</tr>
<tr>
<td>OFF</td>
<td>OFF</td>
<td>OFF</td>
<td>OFF</td>
<td>OFF</td>
<td>OFF</td>
<td>ON</td>
<td>OFF</td>
<td>d5c002</td>
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<td>d5c082</td>
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<td>OFF</td>
<td>OFF</td>
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<tr>
<td>ON</td>
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<td>OFF</td>
<td>OFF</td>
<td>OFF</td>
<td>OFF</td>
<td>OFF</td>
<td>OFF</td>
<td>d5c128</td>
</tr>
</tbody>
</table>

Table 3

ICM Alarm Status “dLcnRL”

This option shows the status of the ICM (Ignition Control Module) Alarm.

To start test, control must be in the Testing Mode. Refer to “How to Enter Testing Feature” at the beginning of this section.

To enter, press the Start (◇/↓) keypad. The display will show “L ON” if the alarm is active for at least one second or “L OFF” if the alarm is not active for one second.

To exit the test, press the Back (✞) keypad. The control will return to the testing mode.

ICM Reset Test “dCnrS”

The ICM Reset Test can be used to both activate the ICM alarm signal and reset the ICM alarm. When this test is started, the ICM reset will become active. If the reset signal is active for a long enough period of time (4 seconds) the ICM Lockout input will become active. To reset the ICM, stop the ICM Reset Test and then start the test again until the ICM Lockout input becomes inactive (4 seconds) and then stop the ICM Reset Test. If “rE5El” shows on the display, ICM Reset output is active.

External Alarm Test “dERALrn”

This option tests whether the external alarm is working.

To start test, control must be in the Testing Mode. Refer to “How to Enter Testing Feature” at the beginning of this section.

To enter, press the Start (◇/↓) keypad. The display will show “ERALrn” and the external alarm will sound until the test is exited.

To exit this test, press the Back (✞) keypad. The control will return to the testing mode.
Tumble Dryer On Temperature Test “ddryon”

This option tests the temperature inside the cylinder while running a cycle.

To start test, control must be in the Testing Mode. Refer to “How to Enter Testing Feature” at the beginning of this section.

To enter, press the Start ( ) keypad. The display will show “F HHHF” (Fahrenheit) or “C HHHF” (Celsius). Use the Up (↑) or the Down (↓) keypad to select desired temperature. Press the Start (Enter) keypad to begin cycle. While the test is running the control will display the temperature estimated in the cylinder (“F HHHF” or “C HHHF”). Once the cylinder temperature stabilizes at the target temperature, the heater is turned off and there is a two minute cool down period. During cool down, the control will display the time remaining as “SS”.

NOTE: This test does not increment the Total # of Cycles audit counter.

To exit the test, press the Back (←) keypad. The control will return to the testing mode.

Thermistor Temperature Test “dHEr”

This option displays the temperature sensed at the thermistor in 5°F (3°C) increments.

To start test, control must be in the Testing Mode. Refer to “How to Enter Testing Feature” at the beginning of this section.

To enter, press the Start ( ) keypad. The display will show “H HHHF” or “H HHHC”. The “H” will show Fahrenheit, the “F” will show Celsius and the “HHH” will show degrees. If control senses a shorted thermistor, the display will show “E SH”. If the control senses an open thermistor, the display will show “H P”.

To exit this test, press the Back (←) keypad. The control will return to the testing mode.

Machine Configuration Display #2 Test “dConf2”

This option shows the machine configuration values for the machine type.

To start test, control must be in the Testing Mode. Refer to “How to Enter Testing Feature” at the beginning of this section.

To enter, press the Start ( ) keypad. The display will show “C HHHF”, with “HHH” the number corresponding to the machine capacity. Refer to Table 4.

<table>
<thead>
<tr>
<th>Value</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>25, 30 Pound Tumble Dryer</td>
</tr>
<tr>
<td>4</td>
<td>30, 45 Pound Stack Tumble Dryer</td>
</tr>
<tr>
<td>5</td>
<td>35, 55 Pound Tumble Dryer</td>
</tr>
<tr>
<td>12</td>
<td>50, 75, F75, 120, 170, 200 Pound Tumble Dryer</td>
</tr>
</tbody>
</table>

Table 4

To exit Machine Configuration Display #2 Test, press the Back (←) keypad. The control will return to the testing mode.
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Machine Configuration Display #3 Test “dConf3”

This option shows the machine configuration values for the machine capacity.

To start test, control must be in the Testing Mode. Refer to “How to Enter Testing Feature” at the beginning of this section.

To enter, press the Start ( ) keypad. The display will show “HHHH”, with “HHHH” representing the machine capacity. Refer to Table 5.

To exit Machine Configuration Display #3 Test, press the Back ( ) keypad. The control will return to the testing mode.

<table>
<thead>
<tr>
<th>Value</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>Tumble Dryer</td>
</tr>
<tr>
<td>17</td>
<td>25 Pound Tumble Dryer</td>
</tr>
<tr>
<td>18</td>
<td>30 Pound Tumble Dryer</td>
</tr>
<tr>
<td>19</td>
<td>30 Pound Stack Tumble Dryer</td>
</tr>
<tr>
<td>20</td>
<td>30 Pound Stack Tumble Dryer – Lower Pocket</td>
</tr>
<tr>
<td>21</td>
<td>30 Pound Stack Tumble Dryer – Upper Pocket</td>
</tr>
<tr>
<td>22</td>
<td>35 Pound Tumble Dryer</td>
</tr>
<tr>
<td>23</td>
<td>45 Pound Stack Tumble Dryer</td>
</tr>
<tr>
<td>24</td>
<td>45 Pound Stack Tumble Dryer – Lower Pocket</td>
</tr>
<tr>
<td>25</td>
<td>45 Pound Stack Tumble Dryer – Upper Pocket</td>
</tr>
<tr>
<td>26</td>
<td>50 Pound Tumble Dryer</td>
</tr>
<tr>
<td>27</td>
<td>55 Pound Tumble Dryer</td>
</tr>
<tr>
<td>28</td>
<td>75, F75 Pound Tumble Dryer</td>
</tr>
<tr>
<td>29</td>
<td>120 Pound Tumble Dryer</td>
</tr>
<tr>
<td>30</td>
<td>170 Pound Tumble Dryer</td>
</tr>
<tr>
<td>31</td>
<td>200 Pound Tumble Dryer</td>
</tr>
</tbody>
</table>

Table 5

Airflow Switch Test “dAF5”

This option shows the current state of the airflow switch.

To start test, control must be in the Testing Mode. Refer to “How to Enter Testing Feature” at the beginning of this section.

To enter, press the Start ( ) keypad. The display will show “AF OP” or “AF CL”, with “AF OP” being open and “AF CL” being closed.

Switch has to be closed for at least one second or open for at least one second for a valid change.

To exit Airflow Switch Test, press the Back ( ) keypad. The control will return to the testing mode.

Fan Motor Test “dFAn”

This option shows the fan motor running.

To start test, control must be in the Testing Mode. Refer to “How to Enter Testing Feature” at the beginning of this section.

To enter, press the Start ( ) keypad. The display will show “FAn” to indicate the fan motor is going to run.

The test must run for at least six seconds before it can be exited and off for six seconds before the test can be run again.

NOTE: This test does not count towards the total machine run time operation.

To exit Fan Motor Test, press the Back ( ) keypad. The control will return to the testing mode.

Damper Motor Test “dAnPr”

This option shows the damper motor running.

To start test, control must be in the Testing Mode. Refer to “How to Enter Testing Feature” at the beginning of this section.

To enter, press the Start ( ) keypad. The display will show “AnPr” to indicate the damper motor is going to run.

The test must run for at least six seconds before it can be exited and off for six seconds before the test can be run again.

NOTE: This test does not count towards the total machine run time operation.

To exit Damper Motor Test, press the Back ( ) keypad. The control will return to the testing mode.
Reverse Motor Test “drEUSE”

This option shows the reverse motor running.

To start test, control must be in the Testing Mode. Refer to “How to Enter Testing Feature” at the beginning of this section.

To enter, press the Start (/cgi-) keypad. The display will show “r
motor” to indicate the reverse motor is going to run.

The test must run for at least six seconds before it can be exited and off for six seconds before the test can be run again.

NOTE: This test does not count towards the total machine run time operation.

To exit Reverse Motor Test, press the Back ( ) keypad. The control will return to the testing mode.

Rotation Sensor Test “dractRb”

This option shows the RPM of the tumble dryer cylinder.

To start test, control must be in the Testing Mode. Refer to “How to Enter Testing Feature” at the beginning of this section.

To enter, press the Start keypad. The display will show “r
PnHHH”. The display is updated every ten seconds. The test must run for at least six seconds before it can be exited and off for six seconds before the test can be run again.

NOTE: This test does not count towards the total machine run time operation.

To exit Rotation Sensor Test, press the Back ( ) keypad. The control will return to the testing mode.

Moisture Sensor Test (Shorted Test Jumper) “drnC 1”

This step is skipped if the control is not configured for Moisture Sensing. When entering this test, the control will show “r
C 1” while flashing the Start key LED one second on/one second off, allowing the user to short the cylinder to the baffle (orange jumper). When the Start key is pressed, this test step energizes the Fan Motor Contactor and Forward Motor Contactor and displays “HH”. The moisture sensor test is 30 seconds. During this 30 second period, the control is continually monitoring the moisture sensor input for the expected moisture sensor level. If an intermittent signal or high resistance is sensed before the time expires, the test is terminated and the control will show “Open”, indicating that the test has failed. At this time, the user has the option to press the Back ( ) keypad to return and run the test again. If the control ran the whole test reading the expected moisture sensor level and without an intermittent signal or high resistance, “PASS” will be shown. If either the loading or lint doors are opened during the test, the control will reset the test step and allow it to be run again. When the test is complete and result is displayed, the control sounds a 5 second audio signal. Press a key to advance to the next test step. If the Up ( ) or Down ( ) keypad is pressed while the test is in progress the control will toggle between displays “HH”, “r
HH” and “5nHHH”. If the display is left on “r
HH” or “5nHHH” for 5 seconds the control will revert to showing “r
1”.

Moisture Sensor Test (Resistance Test Jumper) “drnC 2”

This step is skipped if the control is not configured for Moisture Sensing. When entering this test, the control will show “r
C 2” while flashing the Start key LED one second on/one second off, allowing the user to place the 510k Ohm resistor between the cylinder and the baffle (black jumper) which simulates an expected moisture sensor level. When the Start keypad is pressed, this step energizes the Fan Motor Contactor and Forward Motor Contactor and the control will show “HH”. The moisture sensor test is 30 seconds. During this 30 second period, the control is continually monitoring the moisture sensor input for the expected moisture sensor level. If an intermittent signal or unexpected resistance is sensed before the time expires, the test is terminated and the control will show “Open”, indicating that the test has failed. At this time, the user has the option to press the Back ( ) keypad to return and run the test again. If the control ran the test reading the expected moisture sensor level and without an intermittent signal or unexpected resistance, “PASS” will be shown. If either the loading or lint doors are opened during the test, the control will reset the test step and allow it to be run again. When the test is complete and result is displayed, the control sounds a 5 second audio signal. Press a key to advance to the next test step. If the Up ( ) or Down ( ) keypad is pressed while the test is in progress the control will toggle between “HH”, “r
HH” and “5nHHH”. If the display is left on “r
HH” or “5nHHH” for 5 seconds the control will revert to showing “r
2”.

LED OPL and UniLinc Troubleshooting
LED OPL and UniLinc Troubleshooting

Production Test Cycle

To Enter Production Test Cycle

1. Be certain control is in Idle Mode.
2. While pressing and holding the Down (▼) keypad with one hand, press the Back (←) keypad with the other hand.
3. When the control enters the Production Test Cycle, it will first display “$ HH” with the “HH” showing the software version of the control.
4. The control will advance through the sequence of test steps whenever any keypad is pressed, with the exception of the Keypad Test. Refer to Table 6 for all tests in the Production Test Cycle.

To Exit Production Test Cycle

The test will be exited when the time reaches “00” on the control in the 10 Minute Test Cycle. Otherwise, the control must be powered down to end the test.

<table>
<thead>
<tr>
<th>Display</th>
<th>Test Mode</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>“$ HH”</td>
<td>Software Version</td>
<td>HH is the software version number.</td>
</tr>
<tr>
<td>“£ $HH”</td>
<td>Control Type</td>
<td>2, 3, 4, 5 or 6, depending on brand.</td>
</tr>
<tr>
<td>“PRd”</td>
<td>Keypad Test</td>
<td>When a key is pressed, the control will display the number assigned to the keypad. As each keypad is pressed, the control will display the number assigned to it in the last digit of the display until the next key is pressed (example, if Key 1 is pressed the control will show “PRd 1”). When all keypads have been pressed, the control will advance to next step after a one second delay.</td>
</tr>
<tr>
<td>“door DP” or “door CL”</td>
<td>Loading Door Test</td>
<td>The control will display the status of the loading door: “door DP” if door is open or “door CL” if door is closed.</td>
</tr>
<tr>
<td>“L nE0P” or “L nECL”</td>
<td>Lint Door Test</td>
<td>The control will display the status of the lint door: “L nE0P” if door is open or “L nECL” if door is closed. Loading door must be closed.</td>
</tr>
<tr>
<td>All LEDs and display segments will light</td>
<td>Show Entire Display Mode</td>
<td>The audio signal is turned off. Control will stay in this mode until any key is pressed.</td>
</tr>
<tr>
<td>“$ HH”</td>
<td>Machine Configuration #2 Display</td>
<td>HH is the configuration byte value. The control will remain in this mode until any key is pressed.</td>
</tr>
<tr>
<td>“d5C$HHH”</td>
<td>DIP Switch Configuration</td>
<td>The control will show the sum of all switches in the D5 position. The control will remain in this mode until any key is pressed.</td>
</tr>
<tr>
<td>Degrees in 5°F (3°C) increments, “$H”, “OP”</td>
<td>Thermistor Temperature Test</td>
<td>The temperature will be displayed in either Fahrenheit or Celsius, depending on machine’s configuration (refer to Programming Control). If control senses a shorted thermistor, SH will be displayed. If control senses an open thermistor, OP will be displayed.</td>
</tr>
<tr>
<td>–</td>
<td>Moisture Sensor 1 Test (Shorted)</td>
<td>Refer to Diagnostic Test Descriptions. Test step lasts for 15 seconds.</td>
</tr>
<tr>
<td>–</td>
<td>Moisture Sensor 2 Test (Resistance)</td>
<td>Refer to Diagnostic Test Descriptions. Test step lasts for 15 seconds.</td>
</tr>
<tr>
<td>“∞ $S”</td>
<td>10 Minute Test Cycle</td>
<td>Determines if tumble dryer can function in a cycle for 10 minutes. Start pad will flash one second on and one second off. The Start pad can be used to decrease time remaining. If Start pad is not pressed within 4.25 minutes, the control will return to Idle Mode.</td>
</tr>
</tbody>
</table>

NOTE: If power to the control is turned off before 10 Minute Test Cycle has ended, the cycle will be cleared from control.

Table 6
64. Diagnostic Testing
Models with RU Control Suffix

Diagnostic Menu

The Diagnostic Menu contains Test, Alarm and Machine ID Menus. The menus contain specific diagnostic information and manufacturing data for the machine. The ←, →, ↑, and ↓ keypads position the highlighted box. Press the START/ENTER keypad to select the menu choice.

Press the BACK keypad to return to Diagnostic Menu.

The screen will display “Diagnostics Are Disabled” if the manual diagnostics have been programmed off. Diagnostic test commands via PDA and network will still function.

Test Menu

The Test Menu provides features for manufacturing and customer service testing. The highlighted box is moved horizontally and vertically using the ←, →, ↑, and ↓ keypads. Press the keypad to select the menu choice.

Press the BACK keypad while in the Diagnostic Menu to return to System Menu.

Test Cycle Menu

The Test Cycle Menu is used to run several test steps as well as a ten-minute cycle. Step 01 keypad test requires the user to press each keypad. Step 02 Door Status shows whether the loading and lint doors are open or closed. Press any key to advance. Step 03 Screen Test shows four screens that test the LCD screen. Press any key to advance through each of the four test steps.

The Test Cycle Menu for Test Steps 4-13 is shown in Figure 16.

It is similar to the Inputs/Outputs Menu except that the test step is shown at the bottom of the display and a key press prompt message is shown in the lower right corner. Press ← to advance through the steps. Refer to Table 7 for more details of each step. Press BACK to terminate the test.
# Test Cycle Chart

<table>
<thead>
<tr>
<th>STEP</th>
<th>Test Cycle Step</th>
<th>Display Description</th>
<th>STEP ADVANCE</th>
<th>COMMENTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Keypad Test Step</td>
<td>“Press Each Key To Advance”</td>
<td>Advance after all keypads are pressed.</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Loading and Lint Door Test Step</td>
<td>“Door Status”</td>
<td>Press any keypad.</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Display Test Step</td>
<td>“Press Any Key To Advance Through Screen Test”</td>
<td>Press any keypad.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Display Test Step #1 Screen is blank</td>
<td>Press any keypad.</td>
<td>Press any keypad.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Display Test Step #2 Horizontal Bars</td>
<td>Press any keypad.</td>
<td>Press any keypad.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Display Test Step #3 Horizontal Bars (inverted)</td>
<td>Press any keypad.</td>
<td>Press any keypad.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Display Test Step #4 Screen is black</td>
<td>Press any keypad.</td>
<td>Press any keypad.</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Machine Temperature Index Display Test</td>
<td>Temperature index harness value</td>
<td>Press keypad.</td>
<td>DIP switch status will be shown.</td>
</tr>
<tr>
<td>5</td>
<td>Machine Capacity</td>
<td>Capacity size of machine</td>
<td>Press keypad.</td>
<td>DIP switch status will be shown.</td>
</tr>
<tr>
<td>6</td>
<td>Heat Source</td>
<td>Type of heat machine is configured for</td>
<td>Press keypad.</td>
<td>DIP switch status will be shown.</td>
</tr>
<tr>
<td>7</td>
<td>Reversing Motor Present</td>
<td>Will show if machine is equipped for reversing</td>
<td>Press keypad.</td>
<td>DIP switch status will be shown.</td>
</tr>
<tr>
<td>8</td>
<td>Rotation Sensor Present</td>
<td>Will show if machine is equipped for rotation sensor</td>
<td>Press keypad.</td>
<td>DIP switch status will be shown.</td>
</tr>
<tr>
<td>9</td>
<td>Moisture Sensor Present</td>
<td>Will show if machine is equipped for moisture sensor</td>
<td>Press keypad.</td>
<td>DIP switch status will be shown.</td>
</tr>
<tr>
<td>10</td>
<td>Moisture Sensor Test #1 Runs test for short in moisture sensor circuit</td>
<td>Press any keypad.</td>
<td>Press any keypad.</td>
<td>This step will be skipped if machine is not equipped for moisture sensor.</td>
</tr>
<tr>
<td>11</td>
<td>Moisture Sensor Test #2 Runs test for resistance to expected moisture level</td>
<td>Press any keypad.</td>
<td>Press any keypad.</td>
<td>This step will be skipped if machine is not equipped for moisture sensor.</td>
</tr>
<tr>
<td>12</td>
<td>Ten Minute Cycle</td>
<td>Runs a ten-minute normal cycle</td>
<td>Press keypad.</td>
<td>Any errors encountered are displayed.</td>
</tr>
<tr>
<td>13</td>
<td>Audio Signal Test</td>
<td>Audio signal sounds for five seconds</td>
<td>Automatically.</td>
<td></td>
</tr>
</tbody>
</table>

Table 7
Inputs Outputs Menu

When the Inputs Outputs Menu is accessed through the Diagnostic Menu, the user can manually turn on outputs. The user can scroll through the outputs using any of the arrow keys, the cursor is indicated by flashing the active output on the screen. The user must "setup" the outputs to be turned on. The keypad is used to select individual outputs to be turned on or off. After the keypad is pressed the control will turn the selected outputs on and display the text "RUNNING". The outputs cannot be selected until the keypad is pressed. The text "RUNNING" is no longer displayed. The screen will still show the selected outputs on the screen and the user can again select outputs to be turned on or off. If the keypad is pressed at any time during this test, the control will turn off all outputs if the test is running or return to the previous screen if the test is not running.

If the Inputs Outputs Menu is accessed through the Run Diagnostic Menu (pressing the keypad during a running cycle) the menu shows only what is turned on and off as the cycle runs. Refer to Figure 17.

Abbreviations for the Inputs and Outputs are defined in the following table:

<table>
<thead>
<tr>
<th>Inputs</th>
<th>Outputs</th>
</tr>
</thead>
<tbody>
<tr>
<td>DR</td>
<td>Loading Door</td>
</tr>
<tr>
<td>LD</td>
<td>Lint Door</td>
</tr>
<tr>
<td>AFS</td>
<td>Airflow Switch</td>
</tr>
<tr>
<td>FCRS</td>
<td>Fan Motor Contactor Switch</td>
</tr>
<tr>
<td>FCLS</td>
<td>Fan Motor Centrifugal Switch</td>
</tr>
<tr>
<td>CL</td>
<td>Cabinet High Limit</td>
</tr>
<tr>
<td>SL1</td>
<td>Store 1 High Limit</td>
</tr>
<tr>
<td>SL2</td>
<td>Store 2 High Limit</td>
</tr>
<tr>
<td>IL</td>
<td>Ignition Lockout</td>
</tr>
<tr>
<td>RS</td>
<td>Rotation Sensed</td>
</tr>
<tr>
<td>DIP1</td>
<td>Dip Switch 1</td>
</tr>
<tr>
<td>DIP2</td>
<td>Dip Switch 2</td>
</tr>
<tr>
<td>DIP3</td>
<td>Dip Switch 3</td>
</tr>
<tr>
<td>DIP4</td>
<td>Dip Switch 4</td>
</tr>
<tr>
<td>DIP5</td>
<td>Dip Switch 5</td>
</tr>
<tr>
<td>DIP6</td>
<td>Dip Switch 6</td>
</tr>
<tr>
<td>DIP7</td>
<td>Dip Switch 7</td>
</tr>
<tr>
<td>DIP8</td>
<td>Dip Switch 8</td>
</tr>
<tr>
<td>Temp</td>
<td>Temperature</td>
</tr>
<tr>
<td>RPM</td>
<td>Rotations per Minute</td>
</tr>
<tr>
<td>Moisture</td>
<td>Moisture Level</td>
</tr>
<tr>
<td>DM</td>
<td>Damper Motor</td>
</tr>
<tr>
<td>FM</td>
<td>Fan Motor</td>
</tr>
<tr>
<td>FW</td>
<td>Forward Contactor</td>
</tr>
<tr>
<td>RV</td>
<td>Reverse Contactor</td>
</tr>
<tr>
<td>HT</td>
<td>Heater</td>
</tr>
<tr>
<td>EA</td>
<td>External Alarm</td>
</tr>
<tr>
<td>IR</td>
<td>Ignition Reset</td>
</tr>
</tbody>
</table>

Table 8
Alarms Menus

The Alarms Menu contains three screens of information. On the first screen, Alarms (1 of 3), the eight most recent alarms will contain Cycle Number, Segment Number, Alarm Type, and the Date/Time of the Alarm.

The second screen, Alarms (2 of 3), alarm counts list 1 through 8. Alarm counts consist of how many times a specific alarm has occurred.

The third screen, Alarms (3 of 3), is a continuation of the alarm counts 9 through 16.

Press the or keypad to navigate to the different screens in the Alarms Menu. Press the keypad to go from screen 1 to screen 3. The actual menus are informational only and cannot be navigated.

Press the keypad to return to display to Diagnostic Menu or the Run Diagnostic Menu.

Machine ID Menu

The Machine ID Menu provides several different types of manufacturing and machine information that can be useful to the user and technician. The Machine ID Menu cannot be navigated. Pressing the keypad will return to Diagnostic Menu or the Run Diagnostic Menu.