Home Stacked Washer/Dryers

Refer to Page 6 for Model Numbers





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Troubleshooting

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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.

A DANGER

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

A WARNING

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

A 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.

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



WARNING

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

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

- Disconnect all electric power to the machine and accessories before servicing.
- Close gas shut-off valve to gas dryer before servicing.
- Never start machine with any guards/panels removed.
- Whenever ground wires are removed during servicing, these ground wires must be reconnected to ensure that the machine is properly grounded.
- Washer motor not grounded! Disconnect electric power before servicing motor.

W502



WARNING

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

W007



WARNING

If you or an unqualified person perform service on your machine, 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.

W286

NOTE: The WARNINGS and IMPORTANT INSTRUCTIONS appearing in this manual are not meant to cover all possible conditions and situations that may occur. Common sense, caution and care must be exercised when installing, maintaining or operating the machine.

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

Locating an Authorized Servicer

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

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

Section 2 Introduction

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.

Nameplate Location

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



Model Identification

Information in this manual is applicable to these washers.

ATE50FGP171TW01 ATG50FGP111TW01 CTSA7AWN CTSA7AWN1500 CTSA9AWN

How Your Stacked Washer/Dryer Works



General (Dryer)

The dryer uses heated air to dry loads of laundry. When the motor is started, the exhaust fan pulls fresh air in through louvers at the rear of the dryer and over the heat source (burner flame for gas and heating element for electric). The heated air moves through the heater duct and into the cylinder, where it circulates through the wet load. The air then passes through the lint filter, air duct and exhaust fan, where it is vented to the outdoors.

The dryer has an automatic drying feature. At cycle start, when fabric is wet and the temperature inside dryer is cool, the heat source (burner on gas models and heating element on electric models) is energized and heats the cylinder until operating temperature (as set on Fabric Selector) is reached. Power is not supplied to timer motor while heat source is energized during an Automatic cycle. The heat source runs for longer periods of time in the beginning of the cycle, when it is working to reach the operating temperature, resulting in **very little timer advancement.** As the fabric dries and the cylinder heat is maintained, the heat source is powered less, allowing the timer to advance to cycle end. If dryer heats but timer does not advance, refer to *Paragraph 4*.

General (Washer)

This frontload washer provides some of the same principles of operation as the typical topload washers. It senses water level, it dispenses the desired laundry detergent, agitates the clothes for good cleaning action, removes the water out of the washer and spins the clothing in preparation for the dryer.

The difference in operation is primarily the rotational washing agitation created for the horizontal basket and drum. This agitation tumbles the clothes in a clockwise, pause, and counter-clockwise direction. This reversing tumbling action provides an efficient washing process and requires less laundry detergent and less water.

The cycle begins by pressing the start button, which locks the loading door. The type of cycle and water temperature are determined by the cycle select switch and temperature selector switch.

The inner basket starts agitating during the wash water fill. A column of air is trapped in a pressure bulb and hose. The air pressure continues to increase as the inner basket fills with water until it is great enough to activate the pressure switch which then causes the wash fill to stop.

The regular and perm press agitate cycles tumble the clothing in a clockwise direction for a period of 15

seconds, pauses for nine seconds and then tumbles the clothing in a counterclockwise direction for 15 seconds. This agitation continues until the wash soak cycle. The machine stops agitating and turns on the pump which removes the wash water.

Upon completion of the wash cycle, the machine goes into two rinse cycles. Fresh cold water is brought into the inner basket via the mixing valve until the pressure switch shuts off the water while agitating. The rinse cycle consists of agitation for a predetermined amount of time then a spin mode with the pump running while machine goes into a series of 4 short 500 RPM spins.

After all the rinse cycles have been completed, the washer goes into a final high spin cycle to extract as much water as possible from the clothing to prepare them for the dryer. The spin speeds and duration of this final high spin cycle are determined by the type of wash cycle selected (refer to table).

NOTE: Washer may not reach 1000 RPM because of an out-of-balance condition. Control may limit speed to 850, 650 or 500 RPM depending on severity of out-of-balance condition.

	Regular	Perm Press	Delicate
650	3	4	4
RPM	minutes	minutes	minutes
1000	3	2	0
RPM	minutes	minutes	minutes

Technical (Washer)

The basic operational system of this washer consists of the control, temperature switch, the inverter control, pressure switch, water valves, electric pump, A.C. motor and cycle select switch.

The control performs all timing functions like the timer in a topload washer.

The inverter control uses a speed sensor on the motor to measure the drum RPM. Before entering any spin step the inverter control measures the RPM of motor to sense out-of-balance. The inverter control will try to redistribute the clothes if an out-of-balance condition exists; the inverter control will limit the spin speed to several speeds depending on the severity of the out-ofbalance condition. If the out-of-balance condition is severe enough the inverter control will limit speed to 90 RPM and will not spin.

NOTE: An additional out-of-balance switch is used to detect any out-of-balance condition during spins. If this switch opens during a spin step, inverter control immediately stops and then restarts spin.

Section 3 Troubleshooting

WARNING

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

- Disconnect all electric power to the machine and accessories before servicing.
- Close gas shut-off valve to gas dryer before servicing.
- Never start machine with any guards/panels removed.
- Whenever ground wires are removed during servicing, these ground wires must be reconnected to ensure that the machine is properly grounded.
- Washer motor not grounded! Disconnect electric power before servicing motor.

1. Washer Motor Circuit

Resistance Values:

Tachometer Circuit: Terminals 4–5 Approx. **115** ohms

Windings:

 $\left[\right]$

Terminals 1–2, 2–3, 1-3 Approx. **4.5** ohms



2. Troubleshooting Knocking Noise

If a frontload washer produces a noise similar to a knock on a door, it might be due to a flat spot on the belt. The knocking sound is made when the flat spot hits the pulley. The knocking may occur during a pulse spin and fade after reaching a higher RPM.

To correct this condition, replace the belt.

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

- Disconnect all electric power to the machine and accessories before servicing.
- Close gas shut-off valve to gas dryer before servicing.
- Never start machine with any guards/panels removed.
- Whenever ground wires are removed during servicing, these ground wires must be reconnected to ensure that the machine is properly grounded.
- Washer motor not grounded! Disconnect electric power before servicing motor.

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3. No Spin Due to Out-of-Balance Switch Wiring Problem Starting Serial Nos. Beginning 0307

A "no spin" condition could be the result of an open circuit in the wire harness or out-of-balance switch.

- a. Check that the harness is still connected to the out-of-balance switch. The out-of-balance switch is a **normally closed switch**.
- b. To test the electrical circuit, disconnect electrical power to the washer.
- c. Remove the "H1" connector from the inverter control assembly.
- d. Use an Ohm meter to check the black/white to violet/white wires. Circuit should read closed. An open reading indicates a bad switch or wire harness problem.

- e. Flex the harness at the plastic wire clamp and test continuity. If the base wire harness has an open circuit it MUST be replaced or the broken wires must be repaired with UL approved terminals.
- f. After replacing or repairing the wire harness, secure the harness wires to the original factory locations. Refer to *Figure 1*.
 - (1) The plastic wire clamp should be angled toward the switch at 45 degrees.
 - (2) The clamp should wrap around the first section of tape on the harness.
 - (3) The harness should be secured to the inverter control shield with a wire tie.
 - (4) The tie should wrap around the third section of tape on the harness. Refer to *Figure 1*.



Figure 1

Section 4 Dryer Troubleshooting

WARNING

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

- Disconnect all electric power to the machine and accessories before servicing.
- Close gas shut-off valve to gas dryer before servicing.
- Never start machine with any guards/panels removed.
- Whenever ground wires are removed during servicing, these ground wires must be reconnected to ensure that the machine is properly grounded.
- Washer motor not grounded! Disconnect electric power before servicing motor.

W502

IMPORTANT: Refer to wiring diagram for aid in testing dryer components.

4. No Timer Advance In Automatic Cycles

For a description of Automatic drying feature, refer to SECTION 2. If dryer heats but the timer does not advance, perform the following service procedures:

Electric Dryers

- 1. Remove any damp clothing from the dryer.
- 2. Set the timer to an Automatic cycle. Set fabric selector switch to Regular.
- 3. Remove the top 3 screws holding the control hood to the rear panel.
- 4. Start dryer by pushing in timer knob.
- 5. Using a volt/ohm meter set to AC voltage, measure the voltage across terminal "T" and terminal "M" on timer. Refer to *Figure 2*.
- 6. Meter should read no voltage when the unit is first started and the dryer is still heating. Continue to monitor these points until the heating element has shut off (this will take several minutes even with an empty load). When the heating element shuts off, meter should read 120 Volts and the timer motor should advance the cycle.
- 7. If meter does not read 120 Volts after the unit has reached proper operating temperature use meter to check for 120 AC Voltage between terminal "A" and terminal "N" (neutral) on the timer.
- 8. If voltage is present, recheck voltage between "T" and "M".
- 9. If voltage is present, but timer does not advance, replace timer.
- If meter does not read 120 Volts at "A" and "N", check the wire connections at the heating element and timer (blue/black wire). If the connections are good, UNPLUG dryer, remove wire at terminal "A" on timer and perform an ohms check on wire continuity between the heating element and timer. If the wire shows continuity, replace timer.



Figure 2

Gas Dryers

- 1. Remove any damp clothing from the dryer.
- 2. Set the timer to an Automatic cycle. Set fabric selector switch to Regular.
- 3. Remove the top 3 screws holding the control hood to the rear panel.
- 4. Start dryer by pushing in timer knob.
- 5. Using a volt/ohm meter set to AC voltage, measure the voltage across terminal "T" and terminal "N" on timer. Refer to *Figure 2*.
- 6. Meter should read no voltage when the unit is first started and the dryer is still heating. Continue to monitor these points until the burner has shut off (this will take several minutes even with an empty load). When the burner shuts off, meter should read 120 Volts and the timer motor should advance the cycle.
- 7. If voltage is present, but the timer does not advance, replace timer.
- 8. If meter does not read voltage, check the wiring continuity using ohm scale on meter. UNPLUG dryer. Remove Red/Black striped wire from terminal "T" on timer and perform an ohms check between the timer wire and the cycling thermostat terminal, where the Red/Black stripe wire attaches on the cycling thermostat (located on the blower assembly). If the wire shows continuity, reattach the wire on terminal "T" of timer. Replace cycling thermostat and check for proper operation.

5. Dryer Motor Does Not Run





5. Dryer Motor Does Not Run (continued)

SWD1706S-b

6. Dryer Stops in Cycle; Quits After the First Few Loads; Has a Burning Smell; Cycles On Motor Thermal Protector



SWD1690S



7. Dryer Motor Runs But Cylinder Does Not Turn





SWD1707S



9. Dryer Runs Only When Door is Open

SWD1693S

10. Dryer Heating Assembly Does Not Heat or Burner Does Not Ignite





10. Dryer Heating Assembly Does Not Heat or Burner Does Not Ignite (continued)

SWD1708S-b

11. Igniter Does Not Glow (Gas Supply Sufficient) – Gas Dryer Models



SWD1695S



12. Burner Ignites and Goes Out Repeatedly – Gas Dryer Models

SWD1696S

13. Igniter Glows But Burner Does Not Ignite – Gas Dryer Models



14. Dryer Heater Assembly or Burner Shuts Off Prematurely



15. Dryer Heater Assembly or Burner Repeatedly Cycles Off On Limit Thermostat



802643



15. Dryer Heater Assembly or Burner Repeatedly Cycles Off On Limit Thermostat (continued)

SWD1710S-b

16. Dryer Heater Assembly or Burner Does Not Shut Off



SWD1700S



17. Clothes Do Not Dry in Dryer

18. Timer Does Not Advance in Automatic Cycle





19. Clothes Are Too Hot When Removed From Dryer

SWD1713S

20. Excessive Chattering or Vibrating Noise in Dryer



SWD1703S



21. Excessive Humming or Whistling Noise in Dryer

SWD1704S

Section 5 Washer Control Troubleshooting

WARNING

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

- Disconnect all electric power to the machine and accessories before servicing.
- Close gas shut-off valve to gas dryer before servicing.
- Never start machine with any guards/panels removed.
- Whenever ground wires are removed during servicing, these ground wires must be reconnected to ensure that the machine is properly grounded.
- Washer motor not grounded! Disconnect electric power before servicing motor.

W502

IMPORTANT: Refer to wiring diagram for aid in testing washer control.

V



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

- Disconnect all electric power to the machine and accessories before servicing.
- Close gas shut-off valve to gas dryer before servicing.
- Never start machine with any guards/panels removed.
- Whenever ground wires are removed during servicing, these ground wires must be reconnected to ensure that the machine is properly grounded.
- Washer motor not grounded! Disconnect electric power before servicing motor.

W502

22. Washer Error Code Listing

Error Conditions

If any of the following errors occur, the control enters Error Mode. For all fatal errors, the control will terminate the current cycle, turn off all outputs, and flash two LEDs one second on/one second off to indicate the error.

Motor Failure Error.	If the control receives the motor failure signal from the motor control, the control will enter Error Mode. The control will turn off all outputs and flash the DOOR and FINAL SPIN LEDs one second on/one second off to indicate a motor failure error. This is a fatal error. The machine must be unpowered to clear this error.
Fill Error.	If the control receives no full input from the pressure switch indicating the cylinder is full within 30 minutes of starting the fill, the control will enter Error Mode. The control will turn off all outputs and flash the WASH and DOOR LEDs one second on/one second off to indicate a fill error. This is a fatal error. The machine must be unpowered to clear this error.
Door Open Error.	If the control senses the door open during Run Mode, the control will enter Error Mode. The control will turn off all outputs and flash the WASH and RINSE LEDs one second on/one second off to indicate a door open error. This is a fatal error. The machine must be unpowered to clear this error.
Door Lock/Unlock Error.	If the door doesn't lock in 15 seconds in Door Locking Mode or the door doesn't unlock in 3 minutes in Door Unlocking Mode, the control will enter Door Lock Error Mode. The control will turn off all outputs and flash the DOOR LED one second on/one second off to indicate a door lock/unlock error.
	To clear this error in Door Locked Mode the door must either open or lock. If the door locks, the cycle will start normally. If the door opens, the control will revert back to Start Mode.
	To clear this error in Door Unlocking Mode the door must unlock or open. If the door unlocks or opens, the control will enter End of Cycle Mode.
SPI Communications Error.	This error occurs when there is a problem with communications between the front-end control and the motor control. The control will turn off all outputs and flash the FINAL SPIN and RINSE LEDs one second on/one second off to indicate an SPI communications error. This is a fatal error. The machine must be powered down at this point.

23. Washer Will Not Start – No LEDs/Lights Lit (No response to start switch)



FLW1726S



Washer Will Not Start - No LEDs/Lights Lit (No response to start switch)

24. Washer Will Not Start – Door Open Error (Wash/Rinse LEDs Flashing – Door must be closed and attempting to lock)



FLW1775S



Washer Will Not Start – Door Open Error (Wash/Rinse LEDs Flashing – Door must be closed and attempting to lock)

25. Washer Will Not Start – No Door Lock (Door LED Flashing)





Washer Will Not Start – No Door Lock (Door LED Flashing)

26. Washer Motor Will Not Run (Door/Final Spin LEDs Flashing)



Motor Resistance Values: Tach. Circuit: Approx. 115 ohms (Terminals 4-5) Windings: Approx. 4 - 5 ohms (Terminals 1-2, 1-3, 2-3)

FLW1712S



Washer Motor Will Not Run (Door/Final Spin LEDs Flashing)

27. Washer Will Not Fill – No Communication Error (Wash/Door LEDs Flashing)







28. Washer Overflows



FLW1665S



Washer Overflows

29. Pump Does Not Operate

NOTE: Check at beginning of spin/drain portion of cycle.



FLW1670S



Pump Does Not Operate

30. Serial Communication Error (Final Spin/Rinse LEDs Flashing)



FLW1758S

*NOTE: Machine must be restarted to check voltage. Voltage is intermittently present for the first 15 seconds until error mode is displayed.



Serial Communication Error (Final Spin/Rinse LEDs Flashing)

Section 6 Adjustments

WARNING

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

- Disconnect all electric power to the machine and accessories before servicing.
- Close gas shut-off valve to gas dryer before servicing.
- Never start machine with any guards/panels removed.
- Whenever ground wires are removed during servicing, these ground wires must be reconnected to ensure that the machine is properly grounded.
- Washer motor not grounded! Disconnect electric power before servicing motor.

W502

IMPORTANT: When reference is made to directions (right or left) in this manual, it is from operator's position facing front of unit.

31. Cabinet Leveling Legs

- a. Place unit in position on a solid, sturdy and level floor. Installing the unit on any type of carpeting, soft tile, a platform or other weakly supported structures is not recommended.
- b. Place a level on the cabinet top and check if unit is level from side to side and front to back.

NOTE: Level must be on a raised portion of top panel. Refer to *Figure 3*.

- c. If unit is not level, tilt unit to access front and rear leveling legs. For easier access to leveling legs, prop up unit with wooden block.
- d. Loosen locknuts and adjust the leveling legs until the unit is level from side to side and front to back (using a level). Make sure unit **does not rock**. Refer to *Figure 3*.
- e. Tighten the locknuts securely against the washer base. If the locknuts are not tight, washer will move out of position during operation.



CAUTION

DO NOT slide washer across floor if the leveling legs have been extended, as legs and base could become damaged.

(

CAUTION

Use of the dispenser drawer or washer door as a handle in the transportation of the washer may cause damage to the dispenser or door.

- f. Place rubber feet on all four leveling legs. Refer to *Figure 3*.
- g. Verify unit doesn't rock.



Figure 3



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

- Disconnect all electric power to the machine and accessories before servicing.
- Close gas shut-off valve to gas dryer before servicing.
- Never start machine with any guards/panels removed.
- Whenever ground wires are removed during servicing, these ground wires must be reconnected to ensure that the machine is properly grounded.
- Washer motor not grounded! Disconnect electric power before servicing motor.

W502

32. Washer Loading Door

- a. Open loading door.
- b. The loading door can be adjusted up or down somewhat by loosening screws holding door hinge to front panel, then raise or lower door before retightening screws. Refer to *Figure 4*.



Figure 4

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

- Disconnect all electric power to the machine and accessories before servicing.
- Close gas shut-off valve to gas dryer before servicing.
- Never start machine with any guards/panels removed.
- Whenever ground wires are removed during servicing, these ground wires must be reconnected to ensure that the machine is properly grounded.
- Washer motor not grounded! Disconnect electric power before servicing motor.

W502

33. Washer Motor Belt Tension

NOTE: Belt adjustment procedures are done through front of washer, however, as an option, washer can be moved from its location and belt adjustment can be done through lower access panel opening on rear panel.

- a. While supporting lower front access panel, remove two screws from bottom edge of access panel and remove panel.
- b. Working through the access door opening, place a locking pliers on the metal rod and loosen the two adjusting bolts. Refer to *Figure 5*. Repeat procedure to loosen the two pivot bolts. Refer to *Figure 5*.
- c. Pull down on motor to increase belt tension. Use a Burroughs belt gauge to obtain proper tension. Proper belt tension is obtained when belt can be deflected approximately 1/4 inch (6.35 mm) from normal position when moderate pressure 50 to 60 pounds (22.68 to 27.22 Kg) is applied to a point midway between pulleys. Refer to *Figure 5*.
- d. After proper belt tension has been obtained, tighten belt adjusting bolts firmly, then tighten pivot bolts. Refer to *Figure 5*.



Figure 5



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

- Disconnect all electric power to the machine and accessories before servicing.
- Close gas shut-off valve to gas dryer before servicing.
- Never start machine with any guards/panels removed.
- Whenever ground wires are removed during servicing, these ground wires must be reconnected to ensure that the machine is properly grounded.
- Washer motor not grounded! Disconnect electric power before servicing motor.

W502

34. Washer Door Catch

NOTE: When repairing a broken or inoperative No. 802803 Door Catch, proceed as follows:

- a. Open loading door.
- b. Remove 11 T-20 Torx head screws holding outer door bezel to inner door bezel. Refer to *Figure 6*.
- c. Pull hinge side of outer bezel away from door and slide forward. Refer to *Figure 6*.
- d. Remove two screws and nuts holding door catch to door and remove door catch.
- e. Install new door catch and tighten screws and nuts to the point of being snug.
- f. Adjust door catch so the outside edge is aligned with the edge of the lock. Refer to *Figure 7*.

- g. Visually check that the door catch properly engages the funnel of the door latch/switch assembly. Refer to *Figure 7*.
- h. Recheck the alignment in step "f". Adjust if needed.
- i. Torque the two nuts to approximately 20 inch pounds (2.25 Nm).
- j. Reinstall outer door bezel by aligning outer bezel tabs with cut aways on inner bezel and sliding outer bezel into position. Refer to *Figure 6.*
- k. Replace 11 screws holding outer door bezel to inner door bezel.

IMPORTANT: Do not overtighten screws or bezel holes will strip.



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

- Disconnect all electric power to the machine and accessories before servicing.
- Close gas shut-off valve to gas dryer before servicing.
- Never start machine with any guards/panels removed.
- Whenever ground wires are removed during servicing, these ground wires must be reconnected to ensure that the machine is properly grounded.
- Washer motor not grounded! Disconnect electric power before servicing motor.

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Figure 7



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

- Disconnect all electric power to the machine and accessories before servicing.
- Close gas shut-off valve to gas dryer before servicing.
- Never start machine with any guards/panels removed.
- Whenever ground wires are removed during servicing, these ground wires must be reconnected to ensure that the machine is properly grounded.
- Washer motor not grounded! Disconnect electric power before servicing motor.

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35. Shipping Braces

All stacked washer/dryers, when shipped from the factory are equipped with two factory installed shipping supports. DO NOT remove this shipping material until after machine is placed in its final installed position. Refer to *Figure 8*.

IMPORTANT: DO NOT tip or move washer once these supports have been removed. Removal of supports prior to final installation may cause damage to the shock absorbers and will VOID the product warranty.

NOTE: Shipping supports MUST be kept for future re-positioning or moving of the machine.



Figure 8

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

- Disconnect all electric power to the machine and accessories before servicing.
- Close gas shut-off valve to gas dryer before servicing.
- Never start machine with any guards/panels removed.
- Whenever ground wires are removed during servicing, these ground wires must be reconnected to ensure that the machine is properly grounded.
- Washer motor not grounded! Disconnect electric power before servicing motor.

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36. Burner Flame (Gas Models)

- a. While supporting the access panel, remove two screws from bottom edge of access panel.
- b. Gently lower the access panel to disengage locators from bottom edge of front panel.
- c. Set timer to 60 minutes.
- d. Close the loading door. Start the dryer in a heat setting (refer to Operating Instructions supplied with the dryer). The dryer will start, the igniter will glow red, and the main burner will ignite.
- e. Allow the dryer to operate for approximately five minutes, then loosen the air shutter lockscrew. Refer to *Figure 9*.
- f. Turn the air shutter to the left to get a luminous yellow tipped flame, then turn it back slowly to the right to obtain a steady blue flame.

- g. After proper flame is obtained, tighten air shutter lockscrew firmly. Refer to *Figure 9*.
- h. Reinstall access panel and screws.



WARNING

To reduce the risk of fire or serious injury, the access panel must be in place during normal operation.

NOTE: After the dryer has operated for approximately three minutes, exhaust air or exhaust pipe should be warm.



Figure 9

Section 7 Dryer Test Procedures

WARNING

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

- Disconnect all electric power to the machine and accessories before servicing.
- Close gas shut-off valve to gas dryer before servicing.
- Never start machine with any guards/panels removed.
- Whenever ground wires are removed during servicing, these ground wires must be reconnected to ensure that the machine is properly grounded.
- Washer motor not grounded! Disconnect electric power before servicing motor.

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IMPORTANT: Electrical test procedures in this service manual are performed by using a Volt-Ohm meter. Tests can also be performed using a multimeter or any other electrical testing equipment with which the service person is familiar.

37. Timer Contacts

Refer to Figure 10.

a. Disconnect wires from timer, except timer motor wires.

NOTE: Refer to appropriate wiring diagram when rewiring timer.

- b. Manually rotate timer out of "OFF" position and into cycle.
- c. Set test meter to read Ohms. The following readings should be found:
 - (1) Motor circuit test L1 and M = "zero" Ohms (closed)
 - (2) Heat circuit test L2 and H = "zero" Ohms (closed)
 - (3) Timer motor test T and N = approximately 2460-3100 Ohms or apply live power to timer motor terminals and motor should run.

NOTE: Timer Motor Resistance: 120 Volt, 60 Hz 2,460 – 3,100 Ohms

- (4) Rotate timer to "cooldown" (5 minutes before "OFF"). "Infinite" (open) reading should be found between L1 and H.
- (5) Rotate timer to "OFF" position. "Infinite" (open) reading should be found between L1 and M and between L1 and H.

NOTE: Timer motor power is supplied through M terminal.



Figure 10

38. Fabric Selector Switch

NOTE: Refer to proper model wiring diagram when rewiring switch.

a. Set test meter to read Ohms and apply meter probes to switch terminals.

NOTE: Refer to proper model wiring diagram when reconnecting wires.

FABRIC SELECTOR SWITCH – 3 Position			
	L1-2	L1-3	L1-1
No Heat	-	Х	_
Delicate	Х	-	Х
Perm. Press/Regular	Х	-	_
X indicates closed			

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

- Disconnect all electric power to the machine and accessories before servicing.
- Close gas shut-off valve to gas dryer before servicing.
- Never start machine with any guards/panels removed.
- Whenever ground wires are removed during servicing, these ground wires must be reconnected to ensure that the machine is properly grounded.
- Washer motor not grounded! Disconnect electric power before servicing motor.

39. Drive Motor

Refer to Figure 11.

- a. Remove motor and exhaust assembly.
- b. Disconnect motor wire harness at motor disconnect block.

NOTE: Refer to wiring schematic, Section 8, for internal motor switch wires.

NOTE: Drive Motor Resistance 120 Volt 2,460 – 3,100 Ohms



Figure 11

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c. Motor Switch (Refer to SECTION 8 for Internal Wiring of the Dryer Motor Switch.)



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

- Disconnect all electric power to the machine and accessories before servicing.
- Close gas shut-off valve to gas dryer before servicing.
- Never start machine with any guards/panels removed.
- Whenever ground wires are removed during servicing, these ground wires must be reconnected to ensure that the machine is properly grounded.
- Washer motor not grounded! Disconnect electric power before servicing motor.

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d. Motor Windings (Refer to SECTION 8 for Internal Wiring of the Dryer Motor Switch.)



WARNING

Disconnect electric power to dryer before performing any of the following steps or when replacing inoperative motor switch.

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

- Disconnect all electric power to the machine and accessories before servicing.
- Close gas shut-off valve to gas dryer before servicing.
- Never start machine with any guards/panels removed.
- Whenever ground wires are removed during servicing, these ground wires must be reconnected to ensure that the machine is properly grounded.
- Washer motor not grounded! Disconnect electric power before servicing motor.

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40. Motor Switch

- a. Remove motor and exhaust fan assembly.
- b. Remove the two motor switch attaching screws. Refer to *Figure 17*. Disconnect switch leads. Remove motor switch.
- c. Remove thermal overload protector

NOTE: The thermal overload protector is unique to the motor from which it was removed and should only be used on that motor. To reduce the risk of overheating the motor, do not use any thermal overload protector other than the one taken from the inoperative motor switch in step 3.

> (1) **Motor with Switch on Blower End** Using a small bladed screwdriver, press the thermal overload protector mounting tab downward and remove the thermal overload protector from the inoperative motor switch. *Figure 12*.



Figure 12

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

- Disconnect all electric power to the machine and accessories before servicing.
- Close gas shut-off valve to gas dryer before servicing.
- Never start machine with any guards/panels removed.
- Whenever ground wires are removed during servicing, these ground wires must be reconnected to ensure that the machine is properly grounded.
- Washer motor not grounded! Disconnect electric power before servicing motor.

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- (2) Motor with switch on pulley end Press the tip of a small bladed screwdriver into the slot located between top of motor switch and plastic clip. Lift up on handle of screwdriver until both clip and thermal overload protector detach from motor switch. Refer to *Figure 13*.
- d. Attach the thermal overload protector removed in Step "c" to the new motor switch.
- e. Install new motor switch onto motor and reconnect motor switch leads removed in Step "b". Refer to *Figure 17*.

- f. Test motor switch by following the step-bystep procedures included in *Paragraph 39*.
- g. Before reinstalling the motor assembly, apply power (120 VAC) directly to motor terminals 4 and 5. Then start and run the motor at least 6 times, making sure the motor and switch are operating properly.

NOTE: The dryer manufacturer and parts suppliers are not liable for improper switch installation.



Figure 13

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

- Disconnect all electric power to the machine and accessories before servicing.
- Close gas shut-off valve to gas dryer before servicing.
- Never start machine with any guards/panels removed.
- Whenever ground wires are removed during servicing, these ground wires must be reconnected to ensure that the machine is properly grounded.
- Washer motor not grounded! Disconnect electric power before servicing motor.

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Figure 14

41. Burner System Operation

(Gas Models – Refer to Figure 14.)

a. Components

This burner has four basic components: a silicon carbide (glow bar) igniter, burner tube, sensor, and a two-stage gas valve consisting of a split-coil valve and a secondary coil valve. The split-coil valve is opened when the dryer thermostat calls for heat, while the secondary valve does not open until the igniter has attained ignition temperature.

b. Pre-Ignition Circuits

When the dryer thermostat calls for heat, circuits are completed through the holding coil, sensor, booster coil and igniter. Both coils must be energized to open the split-coil valve. Once opened, the holding coil can hold the valve open without assistance from the booster coil. The sensor triggers the current to travel around the secondary coil and through the igniter, causing the igniter to get hot.

c. Burner Circuit

In approximately 30 seconds, the igniter attains ignition temperature and ignition is made. The heat from the burner flame causes the sensor contacts (located on burner housing beside the igniter) to open. A circuit is then completed through the secondary valve coil, opening the valve and allowing gas to flow.

d. Momentary Power Interruption

Upon resumption of power, sensor contacts will still be open, permitting secondary valve to open. However, with the secondary coil in the circuit, the booster coil cannot draw enough current to open the split-coil valve. When sensor contacts do reclose, the secondary valve will close, and the burner system will be in the normal pre-ignition circuit.

e. Flame Failure

In case of flame failure, the sensor contacts will re-close in about 45 seconds. This will close the secondary valve and the burner system will be in the normal pre-ignition circuit.

f. Ignition Failure

If flame is not established as sensor contacts open, secondary valve will remain open until sensor contacts re-close. Sensor will continue to recycle the igniter and secondary valve (about once per minute) until ignition is made or dryer is turned off.

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

- Disconnect all electric power to the machine and accessories before servicing.
- Close gas shut-off valve to gas dryer before servicing.
- Never start machine with any guards/panels removed.
- Whenever ground wires are removed during servicing, these ground wires must be reconnected to ensure that the machine is properly grounded.
- Washer motor not grounded! Disconnect electric power before servicing motor.

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42. Electrical Circuit To Ignition System (Gas Models)

- a. While supporting the access panel, remove two screws from bottom edge of access panel.
- b. Gently lower the access panel to disengage locators from bottom edge of front panel.
- c. Close main gas shut-off valve. Refer to *Figure 9*.
- d. Remove valve wire harness disconnect block from the holding and booster coil. Refer to *Figure 15*.
- e. Plug dryer power cord into wall receptacle, and start the dryer in a heat setting (refer to the Operating Instructions supplied with dryer).
- f. Set test meter to read AC voltage and apply meter probes into terminals on the dryer harness plug that would correspond to terminals "1" and "2" on the coil. Refer to *Figure 14*. Meter should register line voltage in all Fabric settings, except FLUFF which should read "zero" VAC.
- g. If meter does not read line voltage in step "f", check motor switch, thermostats, fabric switch, accumulator, or timer.



Figure 15



WARNING

To reduce the risk of fire, explosion and electric shock, close the valve in the gas supply line to the gas dryer and disconnect the electrical power unless gas or power supplies are required to perform test procedure.

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43. Gas Valve Coils Check (Gas Models)

- a. While supporting the access panel, remove two screws from bottom edge of access panel.
- b. Gently lower the access panel to disengage locators from bottom edge of front panel.
- c. Close main gas shut-off valve. Refer to *Figure 9*.
- d. Remove disconnect blocks from gas valve coils.
- e. Set test meter to read Ohms and put meter probes to terminals shown in *Figure 15*, and in the following chart.

COIL TOLERANCE READINGS

Meter probes to terminals:	Meter should read:
Holding Coil – Terminals 1 & 2	1365 ± 25 Ohms
Booster Coil – Terminals 1 & 3	560 ± 25 Ohms
Secondary Coil – Terminals 4 & 5	1220 ± 50 Ohms

NOTE: If meter registers any other readings than those listed above, the respective coil(s) should be replaced.



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

- Disconnect all electric power to the machine and accessories before servicing.
- Close gas shut-off valve to gas dryer before servicing.
- Never start machine with any guards/panels removed.
- Whenever ground wires are removed during servicing, these ground wires must be reconnected to ensure that the machine is properly grounded.
- Washer motor not grounded! Disconnect electric power before servicing motor.

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44. Sensor Check (Gas Models)

- a. While supporting the access panel, remove two screws from bottom edge of access panel.
- b. Gently lower the access panel to disengage locators from bottom edge of front panel.
- c. Close main gas shut-off valve. Refer to *Figure 9*.
- d. Remove wires from sensor terminals.
- e. Set test meter to read Ohms and put meter probes on sensor terminals. Meter should read "zero" Ohms. If meter registers an Ohm reading of any amount, replace sensor.

45. Igniter Check (Gas Models)

- a. While supporting the access panel, remove two screws from bottom edge of access panel.
- b. Gently lower the access panel to disengage locators from bottom edge of front panel.
- c. Close main gas shut-off valve. Refer to *Figure 9*.
- d. Disconnect igniter wires at disconnect block.
- e. Set test meter to read Ohms and put meter probes on terminals of igniter wires.
- f. Silicon Carbide Igniter meter should read between 45 200 Ohms. Refer to *Figure 16*.

NOTE: If meter does not read appropriate Ohms, then replace the igniter.

IMPORTANT: Always examine all wires, terminals and connectors to be sure wiring is correct before replacing any components.



Figure 16

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

- Disconnect all electric power to the machine and accessories before servicing.
- Close gas shut-off valve to gas dryer before servicing.
- Never start machine with any guards/panels removed.
- Whenever ground wires are removed during servicing, these ground wires must be reconnected to ensure that the machine is properly grounded.
- Washer motor not grounded! Disconnect electric power before servicing motor.

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46. Thermal Fuse (Electric Models)

- a. While supporting the access panel, remove two screws from bottom edge of front access panel.
- b. Gently lower the access panel to disengage panel locators from bottom edge of front panel.
- c. Label and disconnect wires from thermal fuse.

NOTE: Refer to wiring diagram when rewiring thermal fuse.

d. Set multimeter to read Ohms. Apply meter probes to thermal fuse terminals. Multimeter should read 0 Ohms. If the meter does not show any reading (infinite Ohms), then the fuse is open. If the fuse is open, then replace BOTH the thermal fuse and the limit thermostat.

47. Heater Assembly (Electric Models)

- a. While supporting the access panel, remove two screws from bottom edge of access panel.
- b. Gently lower the access panel to disengage panel locators from bottom edge of front panel.
- c. Disconnect wires from heater assembly.

NOTE: Refer to wiring diagram when rewiring heater assembly.

d. Set meter to read Ohms. Apply meter probes to the heater assembly terminals. Meter should read as follows: (Cold Ohms).

Element Color Code	KW	Voltage/Hz.	Resistance Reading
White	4.75	208 V 60 Hz.	$8.2 \pm .5$ Ohms Cold
Orange	5.35	240 V 60 Hz.	$9.72 \pm .3$ Ohms Cold

48. Cycling or Limit Thermostat

- a. While supporting the access panel, remove two screws from bottom edge of access panel.
- b. Gently lower the access panel to disengage panel locators from bottom edge of front panel.
- c. Label and disconnect wires from thermostat.

NOTE: Refer to wiring diagram when rewiring thermostat.

Cycling Thermostat (S.P.S.T. – 2 Terminals) or Limit Thermostat

- d. Set meter to read Ohms.
 - (1) Apply meter probes to the thermostat terminals.
 - (2) Meter should read "zero."

49. Door Switch

- a. While supporting the access panel, remove two screws from bottom edge of access panel.
- b. Gently lower the access panel to disengage locators from bottom edge of front panel.
- c. Remove two screws holding bottom tabs on front panel to dryer side panels. Swing bottom of front panel away from dryer far enough to disengage hold-down clips and locators from cabinet top.
- d. Disconnect wires from door switch.

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

- e. Set meter to read Ohms and apply meter probes on switch terminals 1 and 3 with door closed. You should get "zero" reading.
- f. Apply probes to terminals 1 and 2 with door closed. The meter should read "infinite".
- g. Open door. Meter should read "infinite" between 1 and 3 and "zero" between 1 and 2.

Section 8 Internal Wiring of Dryer Motor Switch

WARNING

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

- Disconnect all electric power to the machine and accessories before servicing.
- Close gas shut-off valve to gas dryer before servicing.
- Never start machine with any guards/panels removed.
- Whenever ground wires are removed during servicing, these ground wires must be reconnected to ensure that the machine is properly grounded.
- Washer motor not grounded! Disconnect electric power before servicing motor.

MAIN U START ORANGE/COPPER YELLOW/COPPER **BLACK/COPPER** CUSTOMER CIRCUIT PUSH TO **OVERLOAD PROTECTOR** START **BLUE/BROWN** Ē R **Motor Switch** Attaching Screws SWITCH SHOWN IN START POSITION pΛp **26 4 3** 5 C R.S.P.C. D329SE3D

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