TROUBLESHOOTING GUIDE (continued)

Some tests will require accessing components. See Figures 7 & 8, page 19, for component locations. For detailed troubleshooting procedures, refer to "Troubleshooting Tests" beginning on page 12.

PROBLEM	POSSIBLE CAUSE	CHECKS & TESTS
WON'T SPIN	Is lid lock showing open during the cycle?	See TEST #8: Lid Lock, page 18.
	Drive belt.	Verify that drive belt is not damaged.
	Harness connections.	Check harness connections between main control and drive system.
	Shifter problem.	See TEST #3a: Drive System–Shifter, page 13.
	Motor problem.	See TEST #3b: Drive System–Motor, page 14.
	Tachometer problem.	No tub movement or tub speed out of normal range (obstruction/belt/motor).
	Main Control problem.	See TEST #1: Main Control, page 12.
WON'T DRAIN	Drain hose installation.	Check for proper drain hose installation. Make sure it is not inserted more than 4.5" (113mm).
	Plugged drain hose.	Check drain hose for obstructions.
	Obstructions to drain pump.	Check tub sump under impeller plate & basket for obstructions.
	Harness connections.	Check harness connections between main control and drain pump.
	Drain pump.	See TEST #7: Drain Pump, page 17.
	Main Control problem.	See TEST #1: Main Control, page 12.
CYCLE TIME LONGER THAN EXPECTED	Oversuds.	1. Verify use of HE detergent. 2. Excessive detergent usage.
	Off balance.	1. Load is off balance. 2. Balance ring water leak.
	Draining slowly.	Check for pump or drain hose obstructions.
	Water pressure drop.	Results in longer Fill time.
	Friction or drag on drive.	Check motor and bearings; check for clothes between tub and basket.
	Weak suspension.	Basket should not bounce up and down more than once when pushed.
POOR WASH PERFORMANCE Please reference Use & Care Guide	Oversuds.	1. Verify use of HE detergent. 2. Excessive detergent usage.
	Load is tangling.	1. Washer not loaded properly. 2. Perform washer calibration on page 4.
	Incorrect water level.	1. Perform washer calibration on page 4. 2. See TEST #2: Valves, page 13. 3. See TEST #6: Water Level, page 17.
	Clothes wet after cycle is complete (not water saturated, but very damp).	1. Overloaded washer. 2. Oversuds (see above). 3. Items caught in in tub sump. 4. Weak suspension. 5. Shifter not moving into position. 6. Cold/Rinse water > 105°F. 7. See TEST #7: Drain Pump, page 17.
	Load not rinsed.	1. Check proper water supply. 2. Not using HE detergent. 3. Washer not loaded properly. 4. Shifter not moving into position. 5. See TEST #2: Valves, page 13.
	Not cleaning clothes.	1. Washer not loaded properly. 2. Not using HE detergent. 3. Not using correct cycle. 4. Shifter not moving into position.
	Fabric damage.	1. Washer overloaded. 2. Bleach added incorrectly. 3. Sharp items in tub.
	Wrong option or cycle selection.	Refer customer to "Use & Care Guide".

TROUBLESHOOTING TESTS

TEST #1: Main Control

This test checks for incoming and outgoing power to and from main control. This test assumes that proper voltage is present at the outlet.

1. Unplug washer or disconnect power.

2. Remove console to access main control.

3. Verify that ALL connectors are inserted all the way into the main control.

4. Plug in washer or reconnect power.

5. With a voltmeter set to **AC**, connect black probe to J7-3 (Neutral) and red probe to J7-1 (L1).

- If 120VAC is present, go to step 6.
- If 120VAC is not present, check the AC power cord for continuity (See Figure 9, page 20.)

6. Is the "Diagnostic LED" ON or OFF? (See Figure 3 below for LED location.)

- ON: (+5VDC present) continue to step 7.
- OFF: (+5VDC missing) proceed to step 8.

7. With a voltmeter set to **DC**, connect black probe to J9-3 (Circuit Gnd) and red probe to J9-8 (+13VDC).

- If +13VDC (and +5VDC) are present, and UI is unresponsive, go to Test #4: Console and Indicators, page 16.
- If +13VDC is not present, go to step 8.

8. Check if shifter assembly is affecting the main control DC supplies.

a. Unplug washer or disconnect power.

b. Remove connector **J2** from main control.

c. Plug in washer or reconnect power.

Main Control Board Connectors and Pinouts (Figure 3)

J2

SHIFTER	J2-5		OPEN
	J2-4	BLK	+13VDC
	J2-3	GRY	CIRCUIT GND
	J2-2	PNK	RPM INPUT
	J2-1	BLU	SHIFTER POSITION INPUT

J3

TEMP	J3-10	BLK	TEMP THERMISTOR INPUT
	J3-9	BLK	TEMP THERMISTOR GND
VALVES	J3-8		OPEN
	J3-7	ORN	FAB-SOFT VALVE (L1)
	J3-6	BRN	OXI VALVE (L1)
	J3-5	BLU	COLD VALVE (L1)
	J3-4	RED	HOT VALVE (L1)
	J3-3		OPEN
	J3-2		OPEN
	J3-1	WHT	NEUTRAL

J7

POWER CORD	J7-3	BLK	NEUTRAL
	J7-2	GRN	CHASSIS GROUND
	J7-1	BLK	L1

J9

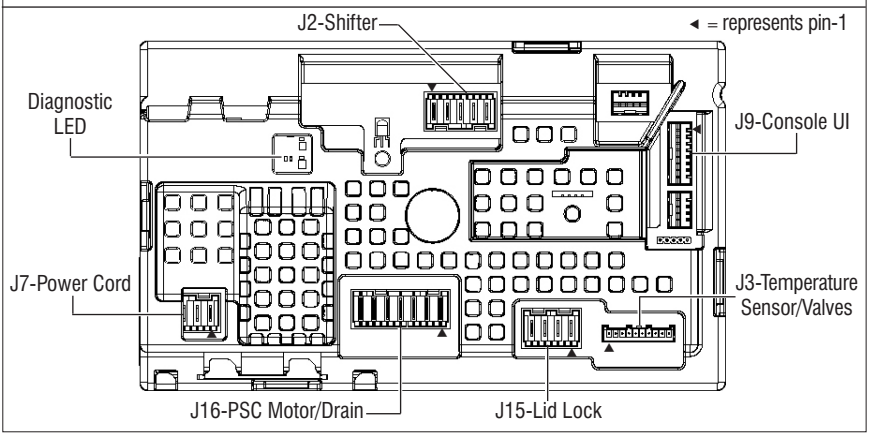
CONSOLE UI	J9-8	WHT	+13VDC
	J9-7	WHT	BUZZER
	J9-6	WHT	CLOCK
	J9-5	WHT	DATA OUT
	J9-4	WHT	STROBE
	J9-3	WHT	CIRCUIT GND
	J9-2	WHT	DATA IN
	J9-1	BLK	+5VDC

J15

LID LOCK	J15-4	RED	LOCK SWITCH
	J15-3	WHT	NEUTRAL
	J15-2	BLU	LID SWITCH INPUT
	J15-1	YEL	LOCK SWITCH SOLENOID (L1)

J16

MOTOR	J16-7	ORN	MOTOR CCW WINDING (L1)
	J16-6	RED	MOTOR CW WINDING (L1)
	J16-5	WHT	MOTOR (NEUTRAL)
	J16-4		OPEN
DRAIN	J16-3	LT BLU	DRAIN PUMP MOTOR (L1)
	J16-2	WHT BLU	SHIFTER MOTOR (NEUTRAL)
	J16-1	BRN	SHIFTER MOTOR (L1)



d. Recheck the DC voltages per steps 6 & 7.

- If one or more DC voltages are still missing, go to step 9.
- If the DC voltages return, check for short in harness between main control and shifter assembly. If harness and connections are good, replace shifter assembly.

9. Check if console UI is affecting the main control DC supplies.

a. Unplug washer or disconnect power.

b. Remove connector **J9** from main control.

c. Plug in washer or reconnect power.

d. Recheck the DC voltages per steps 6 & 7. Perform voltage checks inside header J9 on the board – **do not short pins together**.

- If one or more DC voltages are still missing, go to step 10.
- If the DC voltages return, check for short in harness between main control and UI. If harness and connections are good, replace console UI.

10. Main Control has malfunctioned.

a. Unplug washer or disconnect power.

b. Replace the main control.

c. Reassemble all parts and panels.

d. Plug in washer or reconnect power. Calibrate washer and perform Automatic Test to verify repair.

TEST #2: Valves

This test checks the electrical connections to the valves, and the valves themselves.

1. Check the relays and electrical connections to the valves by performing the Cold, Hot, Oxi, and Fabric Softener Valve tests under Manual Test Mode on page 9. Each test activates and deactivates the selected valve. The following steps assume one (or more) valve(s) did not turn on.

2. For the valve(s) in question check the individual solenoid valves:

a. Unplug washer or disconnect power.

b. Remove console to access main control.

c. Remove connector **J3** from main control. Refer to main control diagram on page 12.

d. Check harness connection to solenoid valves.

3. Check resistance of the valve coils across the following J3 connector pinouts:

Valve	Pinout
Hot Valve	J3, 1 & 4
Cold Valve	J3, 1 & 5
Oxi Valve	J3, 1 & 6
Fabric Softener Valve	J3, 1 & 7

Resistance should be 890–1.3k Ω.

- If resistance readings are tens of ohms outside of range, replace the valve assembly.
- If resistance readings are within range, replace main control and calibrate washer. Perform Automatic Test to verify repair.

TEST #3a: Drive System – Shifter

This test checks connections, shifter motor, switch, and optical sensor.

NOTE: Refer to Figure 4, "Shifter Assembly Strip Circuit" on page 14 for tests and measurements.

IMPORTANT: Drain water from tub before accessing bottom of washer.

Functional Check:

1. Check the shifter and electrical connections by performing both the Spin AND Agitate test under Manual Test Mode on page 9. The following steps assume that this step was unsuccessful.

2. Unplug washer or disconnect power.

3. Check to see if basket will turn freely.

- If basket turns freely, go to step 4.
- If basket does not turn freely, determine what is causing the mechanical friction or lockup.

4. Remove console to access main control.

5. Visually check that the J2 and J16 connectors are inserted all the way into the main control.

- If visual checks pass, go to step 6.
- If connectors are not inserted properly, reconnect J2 and J16 and repeat step 1.

Shifter Motor:

6. Remove connector **J16** from main control. With an ohmmeter, verify resistance of the shifter motor across the following J16 connector pinouts:

Component	J16 Connector Pinout
Shifter Motor	J16, 1 & 2

Resistance should be 2k to 3.5k Ω.

- If values are correct, reconnect J16 and proceed to step 7.
- If values are open or out of range, go to step 13.

7. Plug in washer or reconnect power.

8. With a voltmeter set to **AC**, connect the black probe to J16-2 (N) and red probe to J16-1 (L1). Activate shifter motor by switching between Spin and Agitate modes. Energize outputs using Manual Test Mode on page 9.

IMPORTANT: Lid must be closed with Lid Lock enabled to run the SPIN and AGITATE tests.

NOTE: It will take 4–15 seconds for the shifter to change states.

- If 120VAC is present, go to step 9.
- If 120VAC is not present, to step 17.

Shifter Switch:

9. With a voltmeter set to **DC**, connect the black probe to J2-3 (Circuit Gnd) and red probe to J2-1 (Shifter Switch). In manual test mode, switch between Spin and Agitate modes. Voltage should toggle between 0 and +5VDC.

SPIN = +5 VDC

AGITATE = 0 VDC

- If voltage corresponds to setting, go to step 10.
- If voltage does not switch, go to step 12.

Optical Sensor:

10. With a voltmeter set to **DC**, connect the black probe to J2-3 (Circuit Gnd) and red probe to J2-4 (+13VDC).

- If +13VDC is present, go to step 11.
- If +13VDC is not present, go to step 17.

11. Activate Tachometer Verification Mode from the Service Diagnostic Test Modes (see page 5). Slowly turn the basket by hand. The 4 status LEDs should illuminate one at a time to represent basket RPM.

- If the tachometer is not verified, go to step 12.
- If the tachometer is verified, go to step 17.

12. Unplug washer or disconnect power.

13. Tilt washer back to access the drive system.

14. Visually check the electrical connections to the shifter.

- If visual check passes, go to step 15.
- If connections are loose, reconnect the electrical connections and repeat step 1.

15. With an ohmmeter, check the harness for continuity between the shifter and main control using the following pinouts. See chart below.

Shifter to Main Control & Drain Pump
Shifter Connector Pin-2 to Main Control J16-2
Shifter Connector Pin-3 to Main Control J16-1
Shifter Connector Pin-4 to Main Control J2-4
Shifter Connector Pin-5 to Main Control J2-3
Shifter Connector Pin-6 to Main Control J2-2
Shifter Connector Pin-7 to Main Control J2-1

- If there is continuity, go to step 16.
- If there is no continuity, replace the lower washer harness and repeat step 1.

16. Replace the shifter assembly.

a. Unplug washer or disconnect power.

b. Replace shifter assembly.

c. Reassemble all parts and panels.

d. Plug in washer or reconnect power. Calibrate washer and perform Automatic Test to verify repair.

17. If the preceding steps did not correct the problem, replace the main control.

a. Unplug washer or disconnect power.

b. Replace the main control.

c. Reassemble all parts and panels.

d. Plug in washer or reconnect power. Calibrate washer and perform Automatic Test to verify repair.

TEST #3b: Drive System – Motor

This test checks the motor, motor windings, wiring, and start capacitor.

NOTE: Refer to Figure 5, "PSC Motor Strip Circuit" on page 15 for tests and measurements.

IMPORTANT: Drain water from tub before accessing bottom of washer.

1. Check the motor and electrical connections by performing the Gentle or Heavy Agitation test under Manual Test Mode on page 9. The following steps assume that this step was unsuccessful.

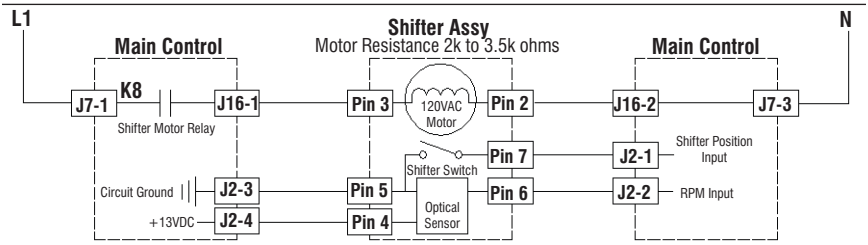


Figure 4 - Shifter Assembly Strip Circuit (Shifter Switch: Open = SPIN, Closed = AGITATE)

2. Unplug washer or disconnect power.

3. Check to see if basket will turn freely.

- If basket turns freely, go to step 4.
- If basket does not turn freely, determine what is causing the mechanical friction or lockup.

4. Remove console to access main control.

5. Visually check that the J2 and J16 connectors are inserted all the way into the main control.

- If visual checks pass, go to step 6.
- If connectors are not inserted properly, reconnect J2 and J16 and repeat step 1.

6. Plug in washer or reconnect power. Run the Gentle Agitation test under Manual Test Mode on page 9.

7. With a voltmeter set to **AC**, connect black probe to J16-5 (N) and red probe to J16-6 (CW Winding).

- If 120VAC is cycling ON during CW rotation, go to step 8.
- If 120VAC is not present, go to Test #1: Main Control, page 12.

8. With a voltmeter set to **AC**, connect black probe to J16-5 (N), red probe to J16-7 (CCW Winding).

- If 120VAC is cycling ON during CCW rotation, go to step 9.
- If 120VAC is not present, go to Test #1: Main Control, page 12.

9. Unplug washer or disconnect power.

10. Remove connector **J16** from main control. With an ohmmeter, check resistance of motor windings across the following J16 connector pinouts:

Motor Winding	J16 Connector Pinout
CW Winding	J16, 6 & 5
CCW Winding	J16, 7 & 5

Resistance should be between 3.5 and 6 Ω.

- If values are open or out of range, go to step 11.
- If values are correct, go to step 15.

11. Tilt washer back to access the drive system.

12. Visually check the mounting bracket and electrical connections to the motor and shifter.

- If visual check passes, go to step 13.
- If connections are loose, reconnect the electrical connections, reassemble motor cover, and repeat step 1.

13. With an ohmmeter, check the harness for continuity between the main control, motor, and run capacitor using the following test points.

Motor Harness Check
Motor Connector Pin-1 to Chassis Ground
Motor Connector Pin-3 to Main Control J16-7
Motor Connector Pin-3 to Run Capacitor Pin-3
Motor Connector Pin-6 to Main Control J16-6
Motor Connector Pin-6 to Run Capacitor Pin-1
Motor Connector Pin-9 to Main Control J16-5

- If there is continuity, go to step 14.
- If there is no continuity, replace the lower washer harness and repeat step 1.

14. With an ohmmeter, check resistance of motor windings at the following motor connections:

Motor Winding	Motor Pinout
CW Winding	Pins 6 & 9
CCW Winding	Pins 3 & 9

Resistance should be between 3.5 and 6 Ω.

- If values are open or out of range, replace motor.
- If values are correct, go to step 15.

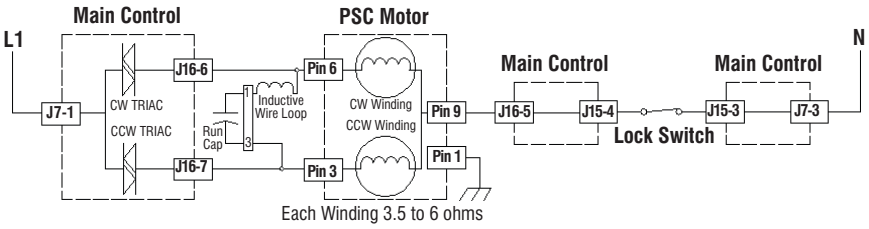


Figure 5 - PSC Motor Strip Circuit (shown in ON position)

15. Test Motor Run Capacitor. **NOTE:** A faulty capacitor may cause the motor to "hum", not start, or turn slowly.

a. Discharge the capacitor by touching the leads of a 20,000 Ω resistor to the two terminals.

b. Disconnect the wires from the capacitor terminals.

c. With an ohmmeter, measure across the terminals and note reading.

- ➢ If a steady increase in resistance is noted, continue to step 16.
- ➢ If the capacitor is either shorted or open, replace capacitor, calibrate washer (page 4), and repeat step 1.

16. If the preceding steps did not correct the motor problem, replace the main control.

a. Unplug washer or disconnect power.

b. Replace the main control.

c. Reassemble all parts and panels.

d. Plug in washer or reconnect power. Calibrate washer and perform Automatic Test to verify repair.

TEST #4: Console and Indicators

Console and Indicators Check:
This test is performed when any of the following situations occurs during "UI Test Mode" on page 5.

- ✓ **None of the indicators light up**
- ✓ **Some buttons do not light indicators**
- ✓ **No beep sound is heard**

None of the indicators light up:

1. Unplug washer or disconnect power.

2. Access the console's electronic assemblies and visually check that the J9 connector is inserted all the way into the main control.

3. Visually check that the user interface assembly is properly inserted in the console.

4. If both visual checks pass, follow procedure under TEST #1, "Main Control" on page 12 to verify supply voltages.

- ➢ If supply voltages are present on the main control, go to step 5.
- ➢ If supply voltages are not present, replace the main control and calibrate washer (p. 4). Perform Automatic Test to verify repair. Go to step 6.

5. Replace the user interface assembly.

6. Reassemble all parts and panels.

7. Plug in washer or reconnect power.

8. To verify repair, activate the Service Diagnostic Mode, and then perform UI Test Mode on page 5.

Some buttons do not light indicators:

1. Unplug washer or disconnect power.

2. Access the console's electronic assemblies and visually check that the electronics and housing assembly is properly inserted into the front console.

3. If visual check passes, replace the user interface assembly.

4. Reassemble all parts and panels.

5. Plug in washer or reconnect power.

6. To verify repair, activate the Service Diagnostic Mode, and then perform UI Test Mode on page 5.

No beep sound is heard:

1. Verify that cycle signal is set to either "Soft" or "Loud." **NOTE:** Pressing and holding the cycle signal button for three seconds will Enable/Disable the cycle signal.

2. Unplug washer or disconnect power.

3. Access the console's electronic assemblies and visually check that the J9 connector is inserted all the way into the main control.

4. If visual check passes, replace the user interface assembly.

5. Plug in washer or reconnect power.

6. Set Cycle Signal to either "Soft" or "Loud." Check for beep tone.

7. If beeper still does not emit a tone, the main control has malfunctioned:

a. Unplug washer or disconnect power.

b. Replace the main control.

c. Reassemble all parts and panels.

d. Plug in washer or reconnect power. Perform washer calibration on page 4. To verify repair, activate the Service Diagnostic Mode, and then perform UI Test Mode on page 5.

TEST #5: Temperature Thermistor

This test checks valves, main control, temperature thermistor, and wiring.

1. Check the cold valve by performing Cold Valve test under Manual Test Mode on page 9.

- If cold water is being dispensed, proceed to step 2.
- If hot water is being dispensed, verify proper hose connection.

2. Check the hot valve by performing Hot Valve test under Manual Test Mode on page 9.

- If hot water is being dispensed, proceed to step 3.
- If cold water is being dispensed, ensure that household hot water is present.

3. Unplug washer or disconnect power.

4. Remove console to access main control.

5. Remove connector **J3** from the main control. With an ohmmeter, measure the resistance of the temperature thermistor between pins J3-9 and J3-10. Verify that the approximate resistance, shown in the table below, is within ambient temperature range.

THERMISTOR RESISTANCE		
Approx. Temperature		Approx. Resistance
F°	C°	(KΩ)
32	0	163
41	5	127
50	10	100
59	15	79
68	20	62
77	25	50
86	30	40
95	35	33
104	40	27
113	45	22
122	50	18
131	55	15
140	60	12
149	65	10

- If the resistance is within the range shown in the table, go to step 6.
- If the resistance is infinite or close to zero, replace the temperature thermistor assembly.

NOTE: Most thermistor errors are a result of the resistor being out of range. If the temperature thermistor malfunctions, the washer will default to pre-programmed wash settings.

6. If the thermistor is good, replace main control and calibrate washer (see page 4). Perform Automatic Test to verify repair.

TEST #6: Water Level

This test checks the water level sensing components. **NOTE:** Usually, if the pressure transducer malfunctions, the washer will generate a long fill, or long drain error.

1. Check the functionality of the pressure transducer by running a small load cycle. The valves should turn off automatically after sensing the correct water level in the tub. The following steps assume that this step was unsuccessful.

2. Drain the tub until all water has been removed.

3. Unplug washer or disconnect power.

4. Remove console to access main control.

5. Check hose connection between the pressure transducer on the main control and the pressure dome attached to the tub.

6. Check to ensure hose is routed correctly in the lower cabinet and not pinched or crimped by the back panel.

7. Verify there is no water, suds, or debris in the hose or dome. Disconnect hose from main control and blow into hose to clear water, suds, or debris.

8. Check hose for leaks. Replace if needed.

9. If the preceding steps did not correct the problem, replace main control and calibrate washer. Perform Automatic Test to verify repair.

TEST #7: Drain Pump

Perform the following checks if washer does not drain.

NOTE: Refer to Figure 6, "Drain Pump Strip Circuit" on page 18 for tests and measurements.

IMPORTANT: Drain water from tub before accessing bottom of washer.

1. Check for obstructions in the usual areas. Clean and then perform step 2.

2. Check the drain pump and electrical connections by performing the Drain Test under Manual Test Mode on page 9. The following steps assume that this step was unsuccessful.

3. Unplug washer or disconnect power.

4. Remove console to access main control.

5. Visually check that the J16 connector is inserted all the way into the main control.

- If visual check passes, go to step 6.
- If connector is not inserted properly, reconnect J16 and repeat step 2.

6. Remove connector **J16** from main control. With an ohmmeter, verify resistance values shown below across the following J16 connector pinouts:

Component	J16 Connector Pinout
Drain Pump	J16, 2 & 3

Resistance should be 14–25 Ω.

- If values are open or out of range, go to step 7.
- If values are correct, go to step 11.

7. Tilt washer back to access drain pump. Verify pump is free from obstructions.

8. Visually check the electrical connections at the drain pump.

- If visual check passes, go to step 9.
- If connections are loose, reconnect the electrical connections and repeat step 2.

9. With an ohmmeter, check harness for continuity between the drain pump and main control. See chart below.

Main Control to Drain Pump
Drain Pump Pin-1 to Main Control J16-3
Drain Pump Pin-2 to Main Control J16-2

- If there is continuity, go to step 10.
- If there is no continuity, replace the lower machine harness and repeat step 2.

10. With an ohmmeter, measure the resistance across the two pump terminals. Resistance should be 14–25 Ω.

- If values are open or out of range, replace the pump motor.
- If the resistance at the pump motor is correct, go to step 11.

11. If the preceding steps did not correct the drain problem, replace the main control.

a. Unplug washer or disconnect power.

b. Replace the main control.

c. Reassemble all parts and panels.

d. Plug in washer or reconnect power. Calibrate washer and perform Automatic Test to verify repair.

TEST #8: Lid Lock

Perform the following checks if the washer does not lock (or unlock).

1. Perform the Lid Lock test under Manual Test Mode on page 9. The following steps assume that this step was unsuccessful.

2. Check lid lock mechanism for obstruction or binding. Repair as necessary.

3. Unplug washer or disconnect power.

4. Remove console to access main control.

5. Visually check that the J15 connector is inserted all the way into the main control.

- If visual check passes, go to step 6.
- If connector is not inserted properly, reconnect J15 and repeat step 1.

6. Remove connector **J15** from main control. With an ohmmeter, verify lid lock resistance values shown below across the following J15 connector pinouts:

LID LOCK RESISTANCE			
Component	Resistance	Contacts Measured	
Lock Switch Solenoid	85 to 155 ohms	J15-1	J15-3
Lock Switch	Locked = 0 ohms Unlocked = Open Circuit	J15-3	J15-4
Lid Switch	Lid Closed = 0 ohms Lid Open = Open Circuit	J15-3	J15-2

- If resistance values are good, go to step 7.
- If switch measurements do not match the values shown in the table for unlocked (or locked) condition, a problem exists in the lid lock. Replace the lid lock mechanism.

7. If the preceding steps did not correct the lock problem, replace the main control.

a. Unplug washer or disconnect power.

b. Replace the main control.

c. Reassemble all parts and panels.

d. Plug in washer or reconnect power. Calibrate washer and perform Automatic Test to verify repair.

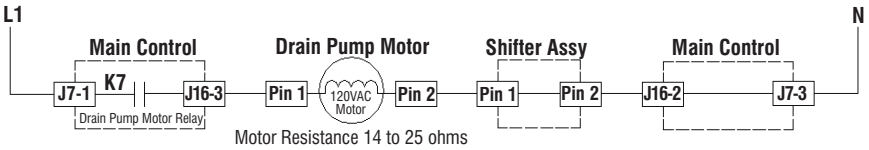
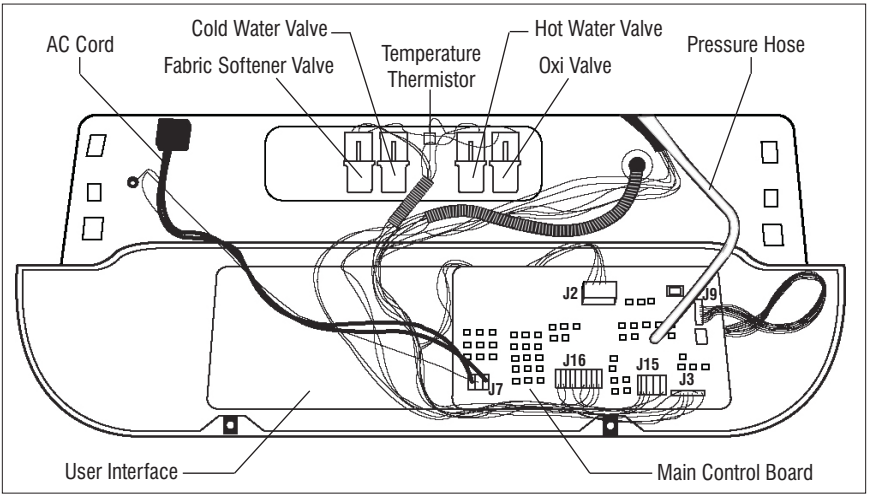
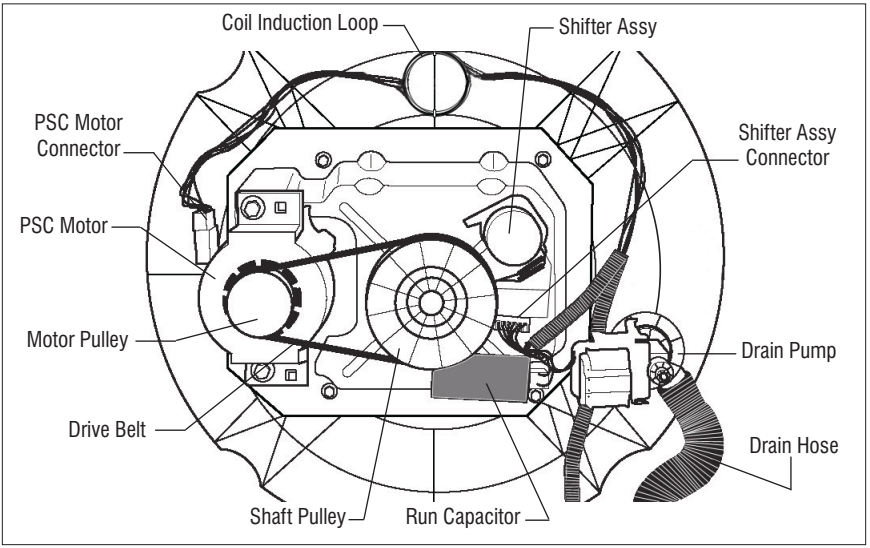


Figure 6 - Drain Pump Strip Circuit

Component Locations – Console Electronics & Valves (Figure 7)



Component Locations – Drive System & Drain Pump (Figure 8)



Specifications

WASHER SPECIFICATIONS	
Voltage:	100-135 VAC
Frequency:	57-63 Hz
Max. Amps:	12.0 Amps
Circuit Protection:	15 Amp Instantaneous Type Fuse (Main Control)
Water Pressure:	15-125 PSI
Drain Height:	34 in. to 8 ft. (86 cm to 244 cm)
Operating Temperature Range:	40 - 115° F (4.5 - 46° C)

Wiring Diagram

IMPORTANT: Electrostatic discharge may cause damage to machine control electronics. See page 1 for ESD information.
NOTE: Schematic shows shifter in SPIN position, lock switch open, and motor off.

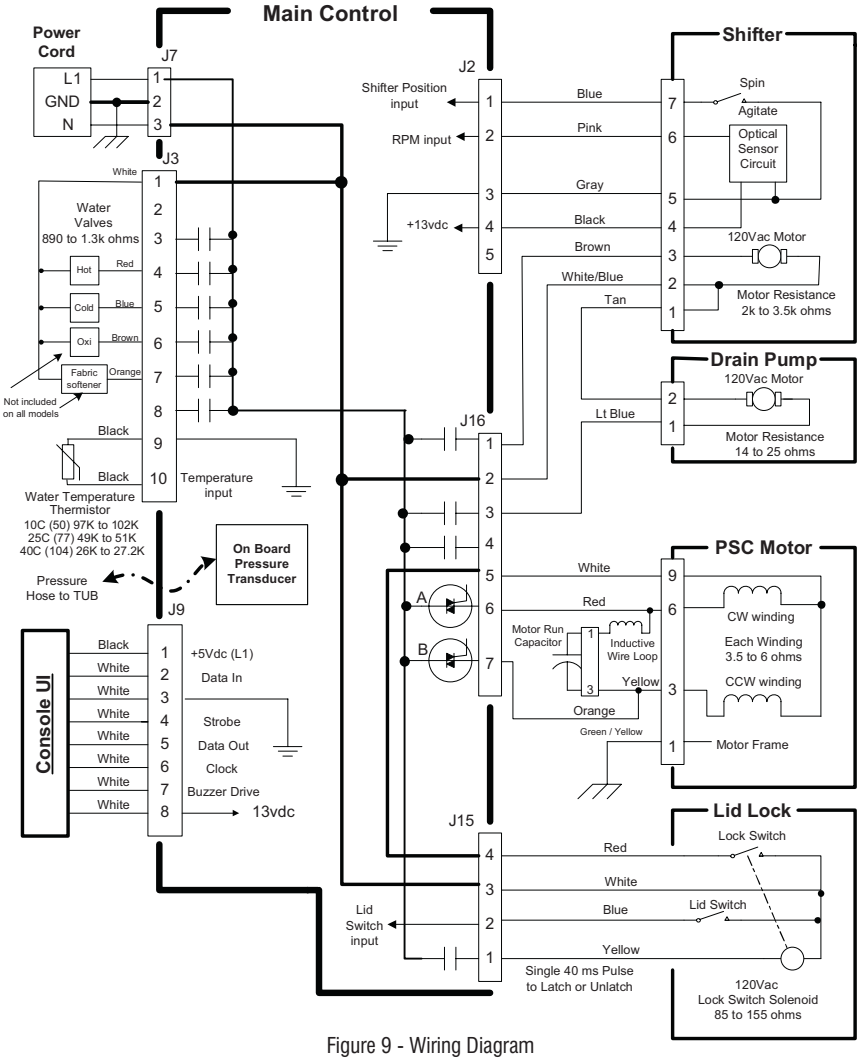


Figure 9 - Wiring Diagram

Legend

Component Terminals	Connection (Splice)	No Connection	Motor Triac	Relay	Switch	Thermistor	Circuit Ground	Chassis Ground