

Washer Tech Data Sheet

This information is intended for Qualified Technicians Only.

CAUTION: DISCONNECT ELECTRIC CURRENT BEFORE SERVICING

Please Return This Sheet to its Envelope in the Product for Future Reference

Membrane Keypad Test

To activate, unplug power cord and reconnect. Press and hold TEMPS and STOP keypads simultaneously at least 2-3 seconds within 10 seconds of power up. Test Sequence:

- Press each keypad (CYCLES, TEMPS, SPEED, OPTIONS etc.) separately to verify each keypad functions and all the LEDs for the selection light up
- Press START to verify Display readouts are functional
- Proceed to functional "On Line Test" below

On Line Test Sequence

This is a functional test for the washer. After first pressing Stop, each successive press of the Start keypad advances the test as noted:

- Press STOP to begin test for hot water operation (H appears in display alternating with numerical value from sensor, water enters, tub rotates)
- Press Start to test for cold water operation (C appears in display alternating with numerical value from sensor, water enters, tub rotates)
- Press Start to test for warm water operation (HC appears in display alternating with numerical value from sensor, water enters, tub rotates)
- Press Start to test for water to bleach chamber (bL appears in display, water enters)
- Press Start to test for water to fabric softener chamber (FA appears in display, water enters)
- Press Start for internal release of door, factory use only (dr appears in display, water stops)
- Press Start to test for agitation and warm water (HC appears in display, water enters until pressure switch is satisfied, tub rotates in agitation)
- Press Start to test for final spin (FS appears in display, pumpout begins and tub begins start of spin cycle, first with load-balancing phase then begins spin after about 1 ¼ minutes)
- Press STOP then START to repeat the On Line Test sequence
- To exit test mode, press CYCLES and STOP simultaneously. Washer will be reset for regular operation. Press STOP again to turn off machine.

Fault Codes for the Washer Electronic Control

The following table shows possible problems associated with fault codes that may be displayed. See "Fault Code Definitions" below the table for additional information about each fault code.

Display Code	Possible Fault Area	Washer Action at Time of Fault
F 01	Fatal error, machine goes into fail mode and stops	Cycle stops, panel displays F 01
F 02	Thermister problem or Reversed Water Hoses	Cycle continues, display flashes F 02 until next cycle or flashes F 02 until fault condition clears
F 03	Pump problem or Pressure Switch problem	Cycle stops, panel displays F 03
F 04	Max Time Out error or Motor Control fault	Cycle stops, panel displays F 04
F 05	Key pad stuck or membrane connection problem	Cycle stops, panel displays F 05

More information on Fault Codes and troubleshooting symptoms is available in the Service Manual

Fault Code Handling

For Fault Codes F01, F03, F04, and F05, the Fault Code is displayed and the washer cycle is stopped. To attempt to clear the Fault, press STOP, select a cycle and press Start. If the Fault code cannot be cleared, there is a problem with the washer and it needs serviced.

If F02 fault is encountered, the Fault Code is flashed on the display until the next cycle is run or until the Fault is cleared. In both cases, the washer will continue to operate.

Fault Code Definitions

F01 – This fault is for an internal to the control fault condition. Something has happened in the internal operation of the control. This type of fault could be temporary or permanent. If this fault occurs, the control will stop the washer and display F01.

If F01 fault is encountered, unplug machine for a few seconds then re-connect power. Select a wash cycle and operate. If F01 re-displays, replace the control as there is likely an internal problem in the board. If the cycle performs without displaying F01, the fault was temporary, no repair is required at this time.

F02 – This fault is for a Water Fill Temperature problem. The problem could be in the Temperature Sensor or the Inlet Hoses may be reversed. In either case, the control will try to resolve the error and the washer will continue to run. Before testing the sensor, first check the wiring to make sure it is properly connected. To test the Temperature Sensor, unplug the washer and disconnect wiring to the sensor. Use an ohmmeter to measure the resistance of the sensor. A reading below about 3K ohm or above about 163K ohm indicates the sensor may be bad and should be replaced.

F03 – This fault code indicates a problem with the Water Fill or Pump system. This type of fault could be temporary or permanent. If this fault occurs, the control will stop the washer and display F03. For the fill system, the problem could be the inlet water is turned off. To test the Filling Fault, run the washer with no clothes load and check if the tub fills to the proper level. If the tub is over filled or the water does not shut off, check the Pressure Switch wiring and the pressure tube connection to the air dome and pressure switch. If these check out, the problem could be in the Pressure Switch or Water Valves.

If the tub fills correctly, run the washer in the Drain/Spin cycle to assure the Pump operates and pumps out water. If the pump is not running, check the wiring connections. If the wiring is proper and seated, measure the voltage across pins 1 and 2 on the pump connector, it should be about 120VAC. If it is not, check the voltage between Pin 3 of the large 4-pin connector (JX) and Pin 3 of the 8-pin connector (J11) (neutral). Voltage should measure about 120VAC.

F04 – This fault indicates either the washer ran too long in one cycle (max. time out) or there is a possible problem with the Motor Control. This type of fault could be temporary or permanent. If this fault occurs, the control will stop the washer and display F04. To test this fault, select and start the Heavy Duty cycle with the Heavy Soil/Stain Option deactivated. The tub should be rotating and begin filling with water. If the tub is not turning, but is filling with water, wait about 30 seconds after the tub is full and confirm the washer is agitating. If the tub is not moving, check the wiring and proceed to the Motor Will Not Run section on reverse side. If the motor is running and the tub filled, let the washer run for at least 6 minutes while measuring the voltage between Pin 1 of the 8-pin connector (J11) and Pin 7 of the 7-pin connector (J6). The voltage should be below 50VAC when the Timer Advance is Off and should measure at Line Voltage when the Timer Advance is On. Constantly monitor the volt meter throughout this 6 minute run time to be certain to observe the voltage change as "Timer Advance On" is only on for a short time and could be missed when it reverts to the lower voltage reading when Timer Advance is Off.

F05 – This fault code indicates a possible problem with the keypads. One of the keys may be stuck or possibly the membrane connection to the control is faulty. This type of fault could be temporary or permanent. If this fault occurs, the control will stop the washer and display F05.

Membrane Key Pad Problems

If the membrane switches or LEDs are not functioning correctly or are functioning erratically, check the connection of the Membrane Tail to the control for proper assembly. To release the ribbon tail, lift the connector block upward at each end about 1/8". The block will remain in place but the ribbon connection will be released. The darker lines side of the ribbon printed circuit must face the control and the connector block must be seated down in locked position for operation.

Press START But Nothing Happens

After selecting a cycle, there is a 4-5 second delay before water fill or start of operation. If the washer fails to start after 5 seconds after selecting a cycle and pressing Start, BEFORE PROCEEDING FURTHER, disconnect power cord from the outlet for a couple seconds and re-connect. This will clear the board if it was inadvertently set to "Demo" mode. (Demo does not allow unit to operate when pressing start).

Display Flashes Very Quickly Between Time and P AU

When the washer is in spin cycle and STOP is pressed, the display will alternate very quickly between time remaining and P AU (indicating pause). This fast alternating display will continue until the door lock releases in 2-3 minutes. The door will be locked, the tub will tumble and the display will show DOOR LOCK until door lock releases. The display will then alternate slowly between time remaining and P AU until the cycle is restarted. If left in Pause, the washer will automatically restart after 30 minutes if the door is closed.

IMPORTANT – Electrostatic Discharge

If Replacing a Control Board, DO NOT handle the component without first discharging static electricity from your body by touching a water faucet.

Separating DISPLAY from Control Board

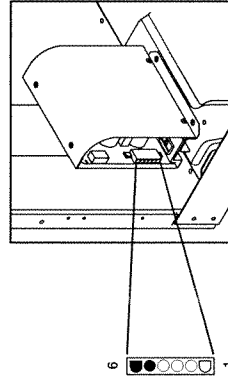
Prior to installing a new control, cut and discard the two 1 3/16" long plastic bars holding the display to the plastic board housing. The display must be separated and oriented the opposite direction when installed in the console.

TECH SHEET - RETAIN FOR SERVICE TECHNICIAN

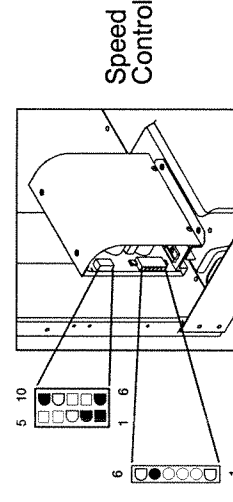
WARNING Disconnect from Electrical Supply Before Servicing Washer.

Motor Will Not Run

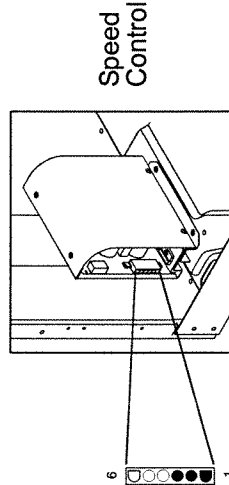
- CHECK FOR POWER:**
Select **Drain/Spin** and push **Start** on the washer control panel. If the drain pump does not run, check household safety circuit. If the drain pump runs go to step 2.
- CHECK FOR MOTOR MOVEMENT:**
Turn the water off to the washer. Remove electrical power from the washer and remove the back panel. Remove the motor drive belt. Reconnect electrical power and select **Heavy Duty** and push **Start** on the washer control panel. If the motor does not rotate, check for proper connections of the black and black/red wires at the door switch and the control panel. If good, and motor does not run go to step 3.
- MEASURE VOLTAGES:**
Remove the six pin plug from the speed control unit. Measure the voltage between pins 5 and 6 on the harness. If the meter reads 0 check connector to pin 1 of the large 4 pin connector on the rear of the control panel and to the service cord neutral. If the meter reads 120 Vac go to step 4.



- Select **Heavy Duty** and push **Start** on the washer control panel. Make sure the **Heavy Soil/Stain** option is not activated. Remove the ten pin plug from the speed control unit. Measure the voltage between pins 1, 2, 6 and 10 of the ten pin plug to pin 5 of the 6 pin plug on the harness. The voltage at pins 2, 6, and 10 should read 120 Vac and 0 Vac at pin 1. If not, check 7 pin connector on the rear of the control panel. The voltage at pins 1, 3, and 4 should be 120 Vac and 0 Vac at pin 2. If the voltage readings are correct, go to step 5.

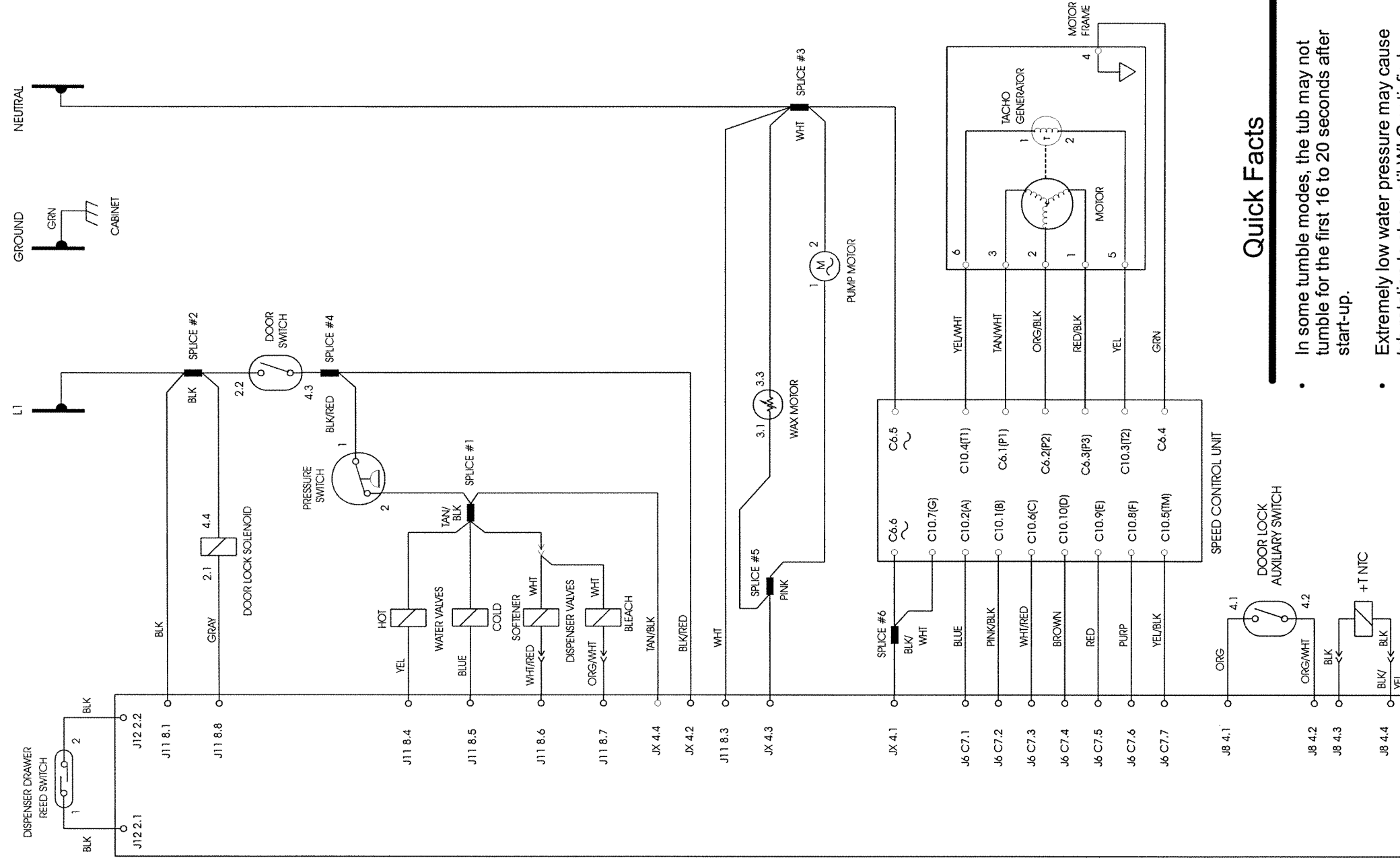


- MEASURE RESISTANCES:**
Check the fuse on the speed control board. If the fuse is open, replace the speed control board. If good, go to step 6.
- Remove the 6 pin plug from the speed control unit. Measure the resistance between pins 1 and 2, 2 and 3, and 3 and 1 of the speed control unit. If the meter reads other than 3 Meg ohms \pm 10%, replace the speed control board.



- Remove electrical power from the washer. With an ohmmeter check the resistance between pins 1 and 2, 2 and 3, and 3 and 1 of the six pin plug on the harness. If the meter reads other than 2.6 ohms \pm 7%, replace the motor.

Wiring Diagram



Quick Facts

- In some tumble modes, the tub may not tumble for the first 16 to 20 seconds after start-up.
- Extremely low water pressure may cause tub rotation to stop until WLC satisfied. The control panel may display F03.

IMPORTANT SAFETY NOTICE

This information is intended for use by technicians possessing adequate background of electrical, electronic and mechanical experience. Any attempt to repair a major appliance may result in personal injury and property damage. The manufacturer or seller cannot be responsible for the interpretation of this information, nor can it assume any liability in connection with its use.

IMPORTANT

If grounding wires, screws or clips used to complete a path to ground are removed for service, they must be returned to their original position and properly fastened. Certain internal parts are intentionally NOT grounded and may present a risk of electric shock only during servicing. Do not contact the following parts while the appliance is energized: pump, drive motor and electronic control boards.