

**⚠ WARNING****Electrical Shock Hazard**

Disconnect power before servicing.

Replace all parts and panels before operating.

Failure to do so can result in death or electrical shock.

**IMPORTANT****Electrostatic Discharge (ESD)  
Sensitive Electronics**

ESD problems are present everywhere. ESD may damage or weaken the electronic control assembly. The new control assembly may appear to work well after repair is finished, but failure may occur at a later date due to ESD stress.

- Use an anti-static wrist strap. Connect wrist strap to green ground connection point or unpainted metal in the appliance

-OR-

Touch your finger repeatedly to a green ground connection point or unpainted metal in the appliance.

- Before removing the part from its package, touch the anti-static bag to a green ground connection point or unpainted metal in the appliance.
- Avoid touching electronic parts or terminal contacts; handle electronic control assembly by edges only.
- When repackaging failed electronic control assembly in anti-static bag, observe above instructions.

**⚠ AVERTISSEMENT****Risque de choc électrique**

Déconnecter la source de courant électrique avant l'entretien.

Remplacer pièces et panneaux avant de faire la remise en marche.

Le non-respect de ces instructions peut causer un décès ou un choc électrique.

**IMPORTANT****Circuits électroniques sensibles  
aux décharges électrostatiques**

Le risque de décharge électrostatique est permanent. Une décharge électrostatique peut endommager ou affaiblir les composants électroniques. La nouvelle carte peut donner l'impression qu'elle fonctionne correctement après la réparation, mais une décharge électrostatique peut lui avoir fait subir des dommages qui provoqueront une défaillance plus tard.

- Utiliser un bracelet de décharge électrostatique. Connecter le bracelet à la vis verte de liaison à la terre ou sur une surface métallique non peinte de l'appareil

-OU-

Toucher plusieurs fois du doigt la vis verte de liaison à la terre ou une surface métallique non peinte de l'appareil.

- Avant de retirer la pièce de son sachet, placer le sachet antistatique en contact avec la vis verte de liaison à la terre ou une surface métallique non peinte de l'appareil.
- Éviter de toucher les composants électroniques ou les broches de contact; tenir la carte de circuits électroniques par les bords seulement lors des manipulations.
- Lors du réemballage d'une carte de circuits électroniques défaillante dans le sachet antistatique, appliquer les instructions ci-dessus.

**DIAGNOSTIC GUIDE**

Before servicing, check the following:

- Make sure there is power at the wall outlet.
- Has a household fuse blown or circuit breaker tripped? Time delay fuse?
- Are both hot and cold water faucets open and water supply hoses unobstructed?
- All tests/checks should be made with a VOM or DVM having a sensitivity of 20,000 ohms per volt DC or greater.
- Check all connections before replacing components. Look for broken or loose wires, failed terminals, or wires not pressed into connections far enough.
- A potential cause of a control not functioning is corrosion on connections. Observe connections and check for continuity with an ohmmeter.
- Connectors: Look at top of connector. Check for broken or loose wires. Check for wires not pressed into connector far enough to engage metal barbs.
- Resistance checks must be made with power cord unplugged from outlet, and with wiring harness or connectors disconnected.

**GUIDE DE DIAGNOSTIC**

Avant d'entreprendre une réparation, contrôler ce qui suit :

- Vérifier que la prise de courant est alimentée.
- Fusible grillé ou disjoncteur ouvert? Fusible temporisé grillé?
- Robinets d'eau chaude et d'eau froide ouverts et tuyaux d'arrivée d'eau exempts d'obstruction?
- Utiliser pour tous les contrôles un voltmètre ou autre instrument dont la résistance interne est de 20 000 ohms par volt CC ou plus.
- Contrôler toutes les connexions avant de remplacer un composant. Rechercher des fils brisés ou mal connectés, ou des bornes ou cosses de connexion détériorées.
- Le non-fonctionnement d'un organe de commande peut être dû à la corrosion des pièces de connexion. Inspecter les connexions et contrôler la continuité avec un ohmmètre.
- Connecteurs : Examiner le sommet d'un connecteur; rechercher des fils brisés ou mal connectés; rechercher également des cosses mal branchées.
- Lors de toute mesure de résistance, vérifier que le cordon d'alimentation est débranché de la prise de courant, et que le faisceau de câblage ou le connecteur est débranché.

## TROUBLESHOOTING GUIDE

**NOTE:** After problem(s) are fixed, please run the diagnostic test to ensure that there have no other issues.

PROBLEM	POSSIBLE CAUSE/TEST
	<b>NOTE:</b> Possible Cause/Tests must be performed in the sequence shown for each problem.
<b>WON'T POWER UP</b> (buttons do not respond when pressed)	<ol style="list-style-type: none"> <li>1. Check that the unit is plugged into a working outlet and for blown fuses.</li> <li>2. Check for power going to Central Control Unit (CCU) by listening for a click in the CCU when unit is plugged in. If no click, replace CCU.</li> <li>3. Unplug washer or disconnect power.</li> <li>4. Check continuity of line cord and line filter.</li> <li>5. Check harness connections to CCU.</li> <li>6. Plug in washer or reconnect power.</li> <li>7. Check the button/LED assembly by selecting different cycles and changing the modifiers and options available to confirm the button/LED assembly is responding.</li> <li>8. Check the connection of the power cord to the line filter and at the CCU. Check to confirm the door closes fully.</li> </ol>
<b>WON'T START CYCLE</b>	<ol style="list-style-type: none"> <li>1. Open and close the door. The door has to be opened between consecutive wash cycles.</li> <li>2. Check the door switch/lock unit using the diagnostics. See Quick Diagnostic Test.</li> <li>3. If door is locked, drain the unit.</li> <li>4. Unplug washer or disconnect power.</li> <li>5. Check the wire harness connections.</li> <li>6. Plug in washer or reconnect power.</li> <li>7. Check the button/LED assembly by selecting different cycles and changing the modifiers and options available to confirm the button/LED assembly is responding.</li> </ol>
<b>WON'T SHUT OFF</b>	<ol style="list-style-type: none"> <li>1. Check for a Fault/Error Code on the display.</li> <li>2. Switch knob to OFF position.</li> <li>3. Check the button/LED assembly by selecting different cycles and changing the modifiers and options available to confirm the button/LED assembly is responding.</li> <li>4. Unplug washer or disconnect power.</li> <li>5. Check that the drain hose and drain pump filter are clear of foreign objects and not plugged.</li> <li>6. Plug in washer or reconnect power.</li> <li>7. Check drain pump.</li> <li>8. Verify CCU operation by running a Quick Diagnostic Test or any cycle.</li> <li>9. Check Knob assembly on the CCU to ensure the direction is properly oriented. See page 9.</li> </ol>
<b>CONTROL WON'T ACCEPT SELECTIONS</b>	<ol style="list-style-type: none"> <li>1. Switch knob to OFF position.</li> <li>2. Drain the unit, and then check that the drain hose and drain pump filter are clear of foreign objects.</li> <li>3. Check the button/LED assembly by using the Universal test mode.</li> <li>4. Unplug washer or disconnect power.</li> <li>5. Check harness connections.</li> <li>6. Plug in washer or reconnect power.</li> <li>7. Verify CCU operation by running a Diagnostic Test or any cycle.</li> </ol>
<b>WON'T DISPENSE</b>	<ol style="list-style-type: none"> <li>1. Verify the unit is level.</li> <li>2. Verify dispenser drawer is not clogged with detergent.</li> <li>3. Check water connections to the unit and within the unit. Check for plugged screen in water source.</li> <li>4. Check the water supply and the water valve.</li> <li>5. Unplug washer or disconnect power.</li> <li>6. Check harness connections.</li> <li>7. Plug in washer or reconnect power.</li> <li>8. Verify CCU operation by running a Quick Diagnostic Test or any cycle.</li> </ol>
<b>WON'T FILL</b>	<ol style="list-style-type: none"> <li>1. Check installation. Verify hot and cold water faucets are open.</li> <li>2. Check inlet valves.</li> <li>3. Unplug washer or disconnect power.</li> <li>4. Check water connections to the unit and within the unit. Make sure water supply hoses are unobstructed. Check for plugged screen.</li> <li>5. Plug in washer or reconnect power.</li> <li>6. Check operating pressure switch.</li> <li>7. Check drain pump motor.</li> <li>8. Verify CCU operation by running a Quick Diagnostic Test or any cycle.</li> <li>9. Check the steps listed under <b>WON'T DISPENSE</b>.</li> </ol>
<b>OVER FILLS</b>	<ol style="list-style-type: none"> <li>1. Verify the unit is level.</li> <li>2. Check pump drain system – this could indicate a failure to drain.</li> <li>3. Unplug washer or disconnect power.</li> <li>4. Check operating pressure switch.</li> <li>5. Check pressure switch hose.</li> <li>6. Plug in washer or reconnect power.</li> <li>7. Verify flow meter operation by blowing air through the part and measuring the resistance.</li> <li>8. Verify CCU operation by running a Quick Diagnostic Test or any cycle.</li> </ol>
<b>DRUM WON'T ROTATE</b>	<ol style="list-style-type: none"> <li>1. Check drive belt.</li> <li>2. Check drive motor.</li> <li>3. Unplug washer or disconnect power.</li> <li>4. Check wire harness connections.</li> <li>5. Plug in washer or reconnect power.</li> <li>6. Perform the Motor Continuity Test.</li> </ol>

<b>MOTOR OVERHEATS</b>	<ol style="list-style-type: none"> <li>1. Check drive motor.</li> <li>2. Unplug washer or disconnect power.</li> <li>3. Check wire harness connections.</li> <li>4. Check drive belt.</li> <li>5. Plug in washer or reconnect power.</li> <li>6. Check for obstruction between the spin basket and the outer tub.</li> </ol>
<b>WON'T DRAIN</b>	<ol style="list-style-type: none"> <li>1. Unplug washer or disconnect power.</li> <li>2. Check wire harness connections.</li> <li>3. Check drain pump.</li> <li>4. Check drain pump motor.</li> <li>5. Check that the drain hose and drain pump filter are clear of foreign objects.</li> <li>6. Plug in washer or reconnect power.</li> <li>7. Verify CCU operation by running a Quick Diagnostic Test or any cycle.</li> </ol>
<b>MACHINE VIBRATES</b>	<ol style="list-style-type: none"> <li>1. Remove shipping system.</li> <li>2. Check installation.</li> <li>3. Check leveling feet.</li> </ol>
<b>INCORRECT WATER TEMPERATURE</b>	<ol style="list-style-type: none"> <li>1. Check that the inlet hoses are connected properly.</li> <li>2. Unplug washer or disconnect power.</li> <li>3. Check water temperature sensor for an abnormal condition. See the Water Temperature Sensor section, page 10.</li> <li>4. Plug in washer or reconnect power.</li> <li>5. Verify CCU operation by running a Diagnostic Test or any cycle.</li> </ol>
<b>DISPLAY FLASHING</b>	See Failure/Error Display Codes.

## DIAGNOSTIC TEST

The two test modes contain three modes of operation.

### Test modes:

- Universal test mode, with additional user interface test at the beginning
- Quick test mode

### Operation modes:

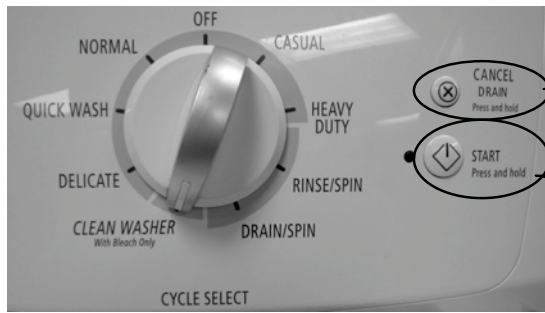
- User interface test
- Automated test
- Loads tests to assist in diagnosing potentially non-electrical issue

### Starting Universal Test Mode

1. Close the door
2. Rotate the knob and select the **CLEAN WASHER** cycle. (See picture below)



3. Press "**CANCEL/DRAIN**" button for **2 times**, and then press "**START**" button for **2 times** within 5 seconds. (See pictures below)



First press "**CANCEL/DRAIN**" button for **2 times**

Then press "**START**" button for **2 times** within 5 seconds.

4. Upon release, and after door locked, all console LED lights will turn ON except option LED. (See pictures below)



5. Press the option buttons, one at a time, to check the User Interface







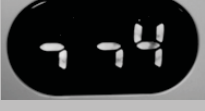


6. Following steps are automatically driven, or they can be manually advanced by pressing the Cancel/Drain button 2 time. See table "**UNIVERSAL DIAGNOSTICS TEST**" on next page.

#### NOTES:

- To cancel out of this mode rotate the selector knob. (This exits you out of the program.)
- Press "**CANCEL/DRAIN**" button **2 times** can advance to the next step of the procedure.
- If the starting procedure fails, switch the knob and back to the **CLEAN WASH** cycle, the repeat the starting procedure.

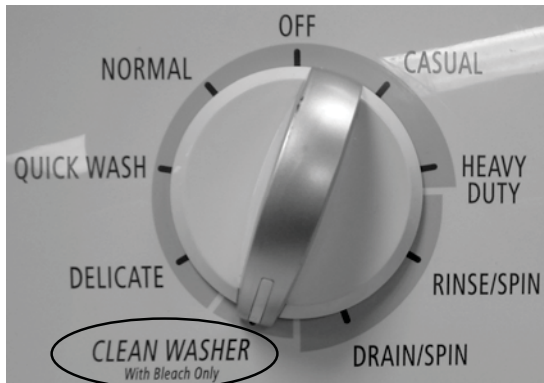
## UNIVERSAL DIAGNOSTICS TEST

Indication	Control Action	Actuators to be Checked	Failure code for failure mode
Factory Test Display (7-SEGMENT LED)			
OFF 	Door locks	<ul style="list-style-type: none"> <li>■ Door lock system</li> </ul>	F13
0 (Phase LED rolling) 	Checks the EEPROM data's validity  Pump turns ON if the water level is detected to be above the wash level	<ul style="list-style-type: none"> <li>■ Drain system</li> <li>■ EEPROM test</li> </ul>	F03, F05, F14, F21, F23, F24, F26, F30
8 	All display led are turned on UI option led will be turned on after options are pushed.	<ul style="list-style-type: none"> <li>■ User interface</li> </ul>	F21, F25
1 	Turns hot valve inlet on (About 15s) Turns bleach valve inlet on (About 15s) Turns cold valve inlet on (About 15s) Fill by cold water inlet valve to Level_wash	<ul style="list-style-type: none"> <li>■ Hot Water inlet valve</li> <li>■ Cold Water inlet valve</li> <li>■ Bleach inlet valve</li> </ul>	F01, F21, F23, F24
2 	Motor reverse. Runs at normal washing speed. (About 15s)	<ul style="list-style-type: none"> <li>■ Reversing relay</li> <li>■ Safety relay</li> <li>■ Motor thermistor</li> <li>■ Tachometer signal</li> </ul>	F06, F07, F21, F27
3 	Pump turns ON to drain the washer	<ul style="list-style-type: none"> <li>■ Drain system</li> </ul>	F03, F21
4 	Drive motor to max speed	<ul style="list-style-type: none"> <li>■ Motor speed</li> <li>■ Tap field relay</li> </ul>	F06, F07, F21, F27, F28

### Starting Quick Test Mode

All of the steps below must be done in sequence in order to reach the Diagnostic Test. This executes the automatic test but does not run the user interface test

1. Close the door
2. Switch the knob and select the **CLEAN WASHER** cycle. (See picture below)



#### NOTES:

Please ensure that current machine status is in PROGRAM (SELECTION) mode. Otherwise, please follow the instructions below to bring it back to PROGRAM (SELECTION) mode.

- 1) PAUSE mode: Press and hold CANCEL/DRAIN button for 3 seconds for reset, then switch knob to enter PROGRAM mode
- 2) FAILURE mode: Switch knob to enter PROGRAM mode
- 3) EXECUTION mode: Press and hold CANCEL/DRAIN button for 3 seconds for reset, then switch knob to enter PROGRAM mode
- 4) STANDBY mode: Press START button or switch knob to enter PROGRAM mode
- 5) DELAY START mode: Switch knob to enter PROGRAM mode

3. Press "**START**" button for **4 times** within 5 seconds. (See picture below)





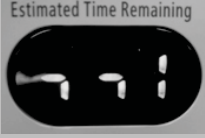

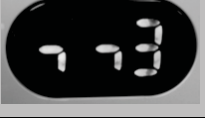
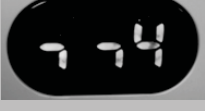
First press "**START**" button for **4 times** within 5 seconds

4. Following steps are automatically driven, or they can be manually advanced by pressing the Cancel/Drain button 2 times. See table "**QUICK DIAGNOSTICS TEST**" on next page.

#### NOTES:

- To cancel out of this mode rotate the selector knob. (This exits you out of the program.)
- Press "**CANCEL/DRAIN**" button **2 times** can advance to the next step of the procedure.
- If the starting procedure fails, switch the knob and back to the **CLEAN WASH** cycle, the repeat the starting procedure.

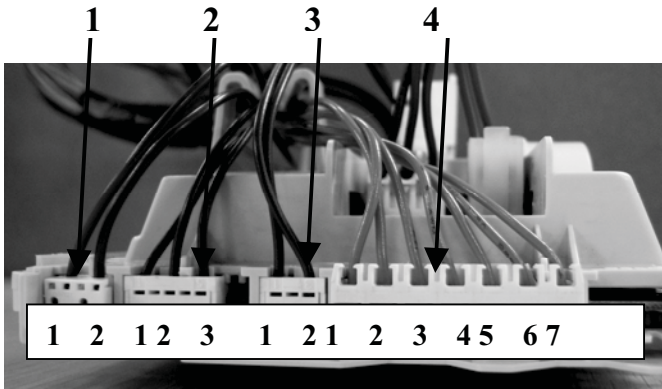
## QUICK DIAGNOSTICS TEST

Indication	Control Action	Actuators to be Checked	Failure code for failure mode
Factory Test Display (7-SEGMENT LED)			
OFF 	Door locks	<ul style="list-style-type: none"> <li>■ Door lock system</li> </ul>	F13
1 (Phase LED rolling) 	Checks the EEPROM data's validity  Pump turns ON if the water level is detected to be above the wash level	<ul style="list-style-type: none"> <li>■ Drain system</li> <li>■ EEPROM test</li> </ul>	F03, F05, F14, F21, F23, F24, F26, F30
1 	Turns hot valve inlet on (About 15s) Turns bleach valve inlet on (About 15s) Turns cold valve inlet on (About 15s) Fill by cold water inlet valve to Level_wash	<ul style="list-style-type: none"> <li>■ Hot Water inlet valve</li> <li>■ Cold Water inlet valve</li> <li>■ Bleach inlet valve</li> </ul>	F01, F21, F23, F24
2 	Motor reverse. Runs at normal washing speed. (About 15s)	<ul style="list-style-type: none"> <li>■ Reversing relay</li> <li>■ Safety relay</li> <li>■ Motor thermistor</li> <li>■ Tachometer signal</li> </ul>	F06, F07, F21, F27
3 	Pump turns ON to drain the washer	<ul style="list-style-type: none"> <li>■ Drain system</li> </ul>	F03, F21
4 	Drive motor to max speed	<ul style="list-style-type: none"> <li>■ Motor speed</li> <li>■ Tap field relay</li> </ul>	F06, F07, F21, F27, F28

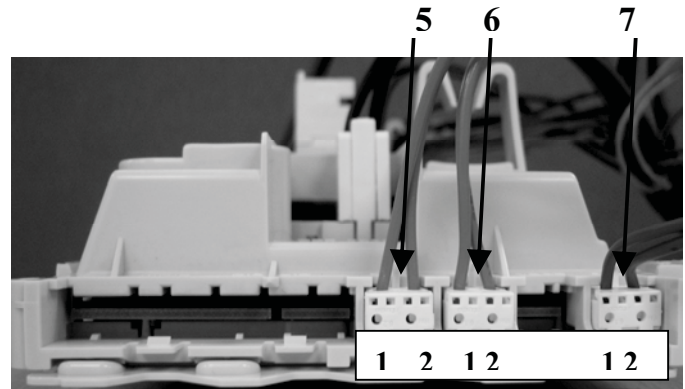
# COMPONENT TESTING

## CENTRAL CONTROL UNIT

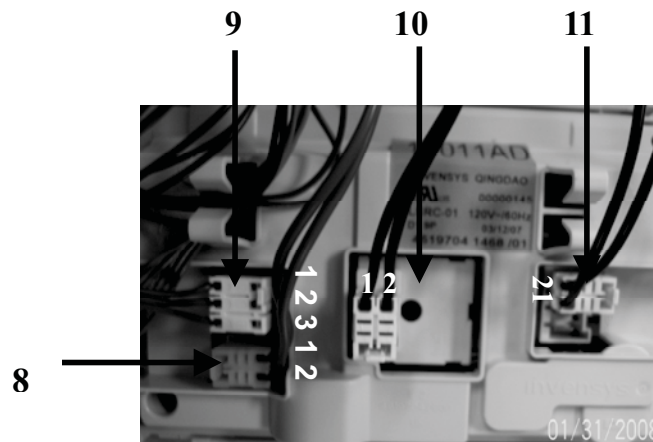
### Connector Location



1. **DP2** Drain Pump
2. **VPW3 & VW3** Cold Valve
3. **VHF3** Hot Valve
4. **M7** Universal Motor



5. **SET2** Temperature Sensor
6. **DU3** Door Switch
7. **PR2** Pressoswitch Input low voltage

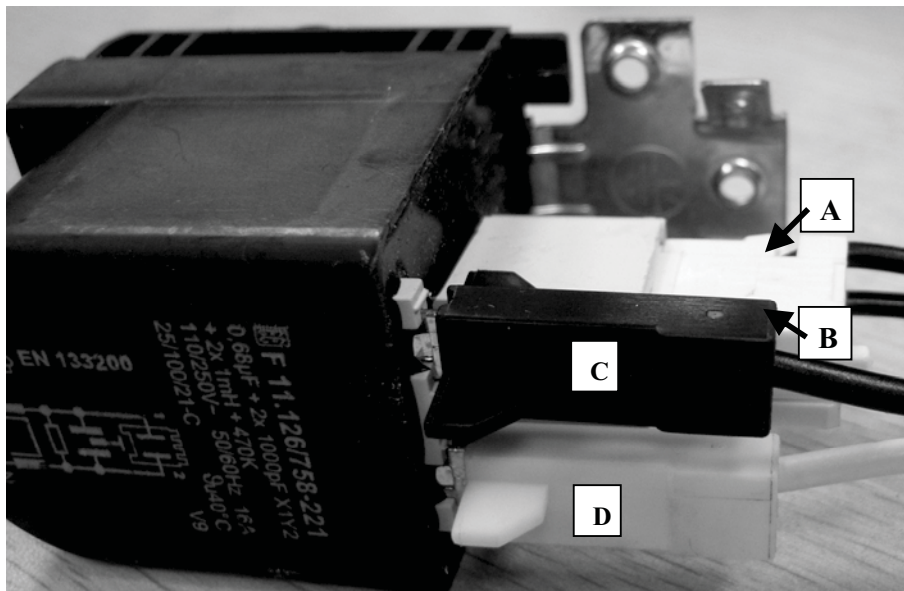


8. **MS2** Motor Supply
9. **DLS3** Door Lock
10. **IF2** RFI filter Door Switch
11. **PRS2** Safety level of Pressoswitch

External Component	Con. ID of Timer	Electrical Ratings	Resistance	Wire Color	Signals
RFI Filter	IF2	120V		Black	1: N 2: L
Motor Supply	MS2	1, 2: 120		1: Blue 2: Black	1: L 2: N
Safety level of Pressoswitch	PRS2	120V		Blue	1: L 2: L_safe
Temperature Sensor	SET2	5V	Refer to the Water Temperature Sensor chart	Orange	1: Vcc 2: V_NTC

Universal Motor	M7	1, 2, 3: 12V 4: 5V 5: 12V 6,7: 60V		Orange	1: SP(SafetyProtect) 2: RC(ReverseControl) 3: TC(Tapped Field) 4: PC(Phase Control) 5: -12V 6: T1(Tacho1) 7: T2(Tacho2)
Door Lock Device Interface (PTC 3 tap)	DLS3	1:120V 2, 3: 120V	1 to 2 Infinity 2 to 3 Infinity 1 to 3 1,5ohm	Black	1: L_ref 2: N_dlock 3: N
Valve Cold MainWash& Bleach	VW3/VPW3	120V	1 to 2 970ohm+-15% 1 to 3 970ohm+-15%	Blue	1: N 2: L_ref 3: L_ref
Valve Hot	VHF2	120V	1 to 2 970ohm+-15%	Blue	1: N_vh 2: L_ref
Drain Pump	DP2	120V	1 to 2 28ohm+-7%	Red	1: L_ref 2: N_pump
DoorSwitch	DU3	5V	Door Open : Infinity Door close: 0ohm	Blue	1: Vcc_ref 2: Vcc_ds
Pressoswitch Input Low Range (classic)	PR2	1:120V 2: 120V		Brown	1: Vcc_levwash 2: Vcc_ovf
User Interface Connection (I2C)	UI4	5V		Blue	1: V_gnd 2: V1_clock 3: V1_data 4: V1

## Line Filter



**A to C = 0ohm**

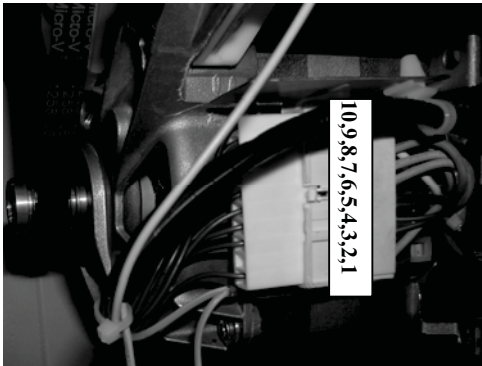
**B to D = 0ohm**

Be sure to perform the Diagnostic Tests before replacing the system components

It is best to measure load resistances through the wire harness at the control board.

**Motor Continuity Test (Connector M7)**

1. Unplug washer or disconnect power.
2. Disconnect the wire harness from the motor and measure the resistance of the motor. Use the following table:



Pins	Results
1 to 5 High speed Stator	Normal = approx. 0.2 ohms
5 to 10 Low Speed Stator	Normal = approx. 1.1 ohms
6 to 7 protector	Normal = approx. 0 ohms
3 to 4 tachometer	Normal = approx. 68 ohms
8 to 9 brusher	Normal = approx. 0.95 ohms

**Water Temperature Sensor**

1. Unplug washer or disconnect power
2. Disconnect the wire harness from the water temperature sensor and measure the resistance of the sensor. Use the following table. An abnormal condition is an open circuit.

Temperature	Results
32°F (0°C)	35,975 k
86°F (30°C)	9,786 k
104°F (40°C)	6,653 k
122°F (50°C)	4,608 k
140°F (60°C)	3,243 k
158°F (71°C)	2,332 k
203°F (96°C)	1,093 k

**Water Valves**

Nominal resistor (20°C): 970Ω+/-15%

Supplied Voltage	Valve Status
>= nominal voltage	opened
0	closed

## ELECTRONIC ASSEMBLIES - REMOVAL OR REPLACEMENT

**IMPORTANT:** Electrostatic (static electricity) discharge may cause damage to electronic control assemblies. See page 1 for details.

**NOTE:** Be sure to perform the Diagnostic Tests before replacing the control board.

### Central Control Unit (CCU):

1. Unplug washer or disconnect power, switch the knob to the OFF position.
2. Remove front panel and dispenser drawer.
3. Remove screws that were covered by dispenser drawer.
4. Remove control panel and all connectors from the CCU.
5. Lift tab at left corner of CCU with a flat blade screwdriver. Slide the CCU to the rear of the washer cabinet until the two tabs on the back of the CCU align with the keyhole notches in the control panel. Pull the CCU away from control panel.

### To reassemble CCU:

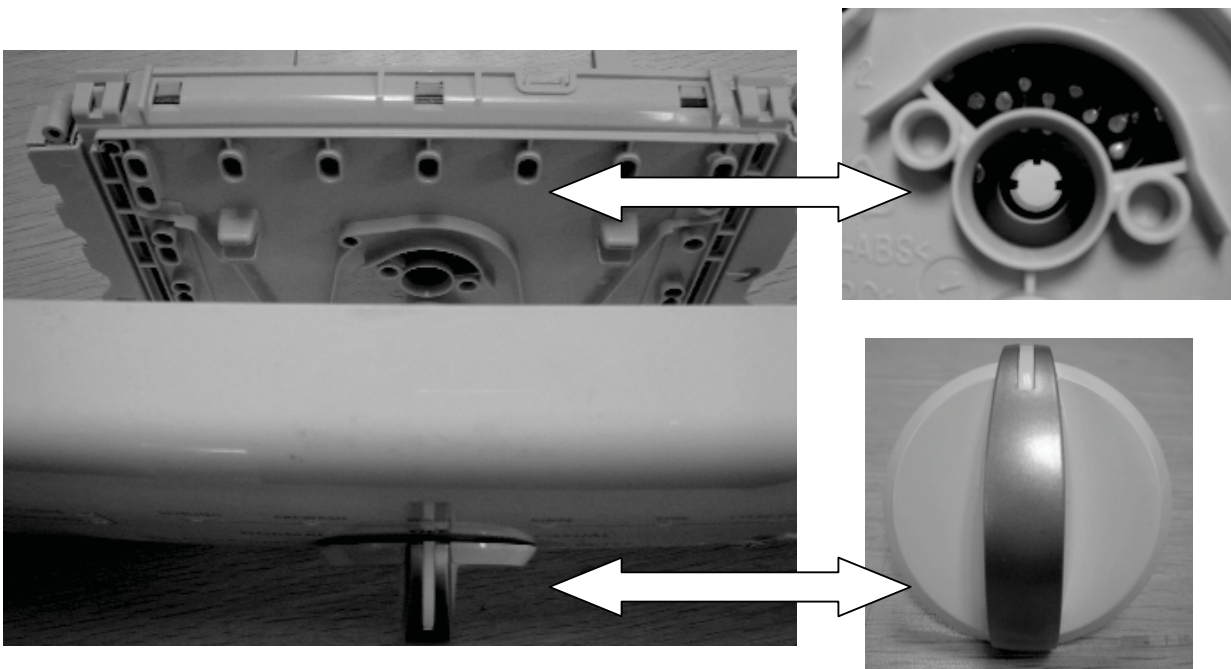
1. Align the two tabs on the back of the CCU with the keyhole notches in the control panel.
2. Slide the CCU forward until the tab at the rear of the CCU locks into place.
3. Reconnect wire harness.
4. Verify that the CCU encoder and the knob are both at the "off" position before assembling. See the pictures below as a visual aid.

### LED assembly:

1. Unplug washer or disconnect power.
2. Remove front panel and dispenser drawer.
3. Remove the (insert the quantity) screws that were covered by the dispenser drawer.
4. Remove control panel.
5. Disconnect LED assembly wire harness from the CCU.
6. Along the upper side of the LED assembly there are two tabs, insert a flat blade screwdriver to release the upper side of the LED assembly.
7. On the left hand side, press tab to release left side of the LED assembly.
8. Gently pry up and completely release the entire LED assembly.

### Motor Control Unit (MCU):

1. Unplug washer or disconnect power.
2. Disconnect the wire harness from the MCU.
3. Remove drain hose from the MCU.
4. Remove the screw using a flat blade screwdriver. Lift up the front tab and slide the assembly to the rear. Separate the MCU from the cover.



## FAILURE CODES

DISPLAY AFFICHAGE	EXPLANATION AND RECOMMENDED PROCEDURE
<b>A09</b>	<b>NO WATER DETECTED ENTERING MACHINE OR PRESSURE SWITCH TRIP NOT DETECTED</b>
	Water level is not reached within a defined time in normal wash cycle.
	<p><b>Possible Causes/Procedure</b></p> <ul style="list-style-type: none"> <li>■ If there is no water in the unit: <ul style="list-style-type: none"> <li>– Make sure that both valves at the water source(s) are turned on all the way.</li> <li>– Check for plugged or kinked inlet hoses or plugged screens in the inlet valves.</li> <li>– Verify inlet valve operation.</li> </ul> </li> <li>■ If there is water in the unit: <ul style="list-style-type: none"> <li>– Verify drain pump operation.</li> <li>– Remove hose from pressure switch. Dislodge any debris build up in the hose inside the outer tub.</li> <li>– Verify that the pressure switch hose is in good condition and properly connected to tub and pressure switch.</li> </ul> </li> </ul> <ol style="list-style-type: none"> <li>1. Verify there is not a siphon problem.</li> <li>2. Unplug washer or disconnect power.</li> <li>3. Verify wire harness connections to inlet valves, pressure switch, drain pump and Central Control Unit (CCU).</li> <li>4. Check all hoses for possible leaks.</li> <li>5. Plug in washer or reconnect power</li> <li>6. Verify pressure switch operation.</li> <li>7. Verify CCU operation by running a Quick Diagnostic Test or any cycle</li> </ol>
<b>A10</b>	<b>LONG DRAIN</b>
	<p>If the drain time exceeds 4 minutes the water valves turn off.</p> <p>NOTES:</p> <p>Rotate knob to clear the display.</p>
	<p><b>Possible Causes/Procedure</b></p> <ol style="list-style-type: none"> <li>1. Check the drain hose and make sure it is not plugged or kinked.</li> <li>2. Unplug washer or disconnect power.</li> <li>3. Remove hose from pressure switch. Dislodge any debris build up in the hose inside the outer tub.</li> <li>4. Check the electrical connections at the pump and make sure the pump is running.</li> <li>5. Check the drain pump filter for foreign objects.</li> <li>6. Plug in washer or reconnect power.</li> <li>7. If the above does not correct the problem, go to step 8.</li> <li>8. Unplug washer or disconnect power.</li> <li>9. Replace the pump.</li> </ol>

<b>F01</b>	<b>NO WATER DETECTED ENTERING MACHINE OR PRESSURE SWITCH TRIP NOT DETECTED</b>
	Water level is not reached within a variable time (EEPROM parameter) in whirlpool factory test
	<p><b>Possible Causes/Procedure</b></p> <ul style="list-style-type: none"> <li>■ If there is no water in the unit: <ul style="list-style-type: none"> <li>– Make sure that both valves at the water source(s) are turned on all the way.</li> <li>– Check for plugged or kinked inlet hoses or plugged screens in the inlet valves.</li> <li>– Verify inlet valve operation.</li> </ul> </li> <li>■ If there is water in the unit: <ul style="list-style-type: none"> <li>– Verify drain pump operation.</li> <li>– Verify that the pressure switch hose is in good condition and properly connected to tub and pressure switch.</li> <li>– Remove hose from pressure switch. Dislodge any debris build up in the hose inside the outer tub.</li> </ul> </li> </ul> <ol style="list-style-type: none"> <li>1. Verify there is not a siphon problem.</li> <li>2. Unplug washer or disconnect power.</li> <li>3. Verify wire harness connections to inlet valves, pressure switch, drain pump and Central Control Unit (CCU).</li> <li>4. Check all hoses for possible leaks.</li> <li>5. Plug in washer or reconnect power</li> <li>6. Verify pressure switch operation.</li> <li>7. Verify CCU operation by running a Quick Diagnostic Test or any cycle</li> </ol>
<b>F02</b>	<b>OVERFLOW CONDITION</b>
	Overflow level has been reached, and last for more than 2 seconds. In an overflow condition, the door remains locked and the drain pump runs constantly, and after 10 minutes, door will be unlocked in order to cut off the valves power. Then if overflow still happens, start pump again. Turn off hot and cold water faucets and unplug the unit before servicing.
	<p><b>Possible Causes/Procedure</b></p> <ol style="list-style-type: none"> <li>1. Check the drain hose and make sure it is not plugged or kinked.</li> <li>2. Unplug washer or disconnect power, if water still flows into the washer, replace the water valve.</li> <li>3. Check wire harness connections to the drain pump, pressure switch, water inlet value, and Central Control Unit (CCU).</li> <li>4. Check/clean drain pump filter of foreign objects.</li> <li>5. Check for drain pump failure.</li> <li>6. Check the inlet valve for proper shut off.</li> <li>7. Check the pressure switch for proper operation.</li> <li>8. Remove hose from pressure switch. Dislodge any debris build up in the hose inside the outer tub. Debris in side the hose will not allow the switch to sense a pressure change.</li> </ol>
<b>F03</b>	<b>LONG DRAIN</b>
	If the drain time exceeds 4 minutes the water valves turn off. Only in factory test.
	<p>NOTES: Rotate knob to clear the display.</p> <p><b>Possible Causes/Procedure</b></p> <ol style="list-style-type: none"> <li>1. Turn washer ON to verify pump operates.</li> <li>2. Check the drain hose and make sure it is not plugged or kinked.</li> <li>3. Unplug washer or disconnect power.</li> <li>4. Check the electrical connections at the pump and make sure the pump is running.</li> <li>5. Check the drain pump filter for foreign objects.</li> <li>6. Plug in washer or reconnect power.</li> <li>7. If the above does not correct the problem, go to step 8.</li> <li>8. Unplug washer or disconnect power.</li> <li>9. Replace the pump.</li> </ol>

<b>F05</b>	<b>WATER TEMPERATURE SENSOR ERROR</b>
	If the water temperature sensor (NTC) value is out of range (Below 23 degrees F. or above 217 degrees) during wash cycle.
	<b>Possible Causes/Procedure</b> <ol style="list-style-type: none"> <li>1. Unplug washer or disconnect power.</li> <li>2. Check the water temperature sensor and connection to it.</li> <li>3. Refer to the Water Temperature Sensor section, page 8.</li> <li>4. Check wire harness and connections between the Central Control Unit (CCU) and the water temperature sensor</li> </ol>
<b>F06</b>	<b>DRIVE MOTOR TACHOMETER ERROR</b>
	If the control is unable to properly detect motor speed, the machine shuts down.
	<b>Possible Causes/Procedure</b> <ol style="list-style-type: none"> <li>1. Verify the shipping system including shipping bolts, spacers and cables are removed.</li> <li>2. Run Quick Diagnostics Test to check motor drive system.</li> <li>3. Unplug washer or disconnect power.</li> <li>4. Check wire harness connections between the drive motor and the motor control board, and between the Central Control Unit (CCU).</li> <li>5. Plug in washer or reconnect power.</li> </ol>
<b>F07</b>	<b>MOTOR OVERSPEED</b>
	If there the motor speed is not controlled then it will switch OFF the motor and wait for the speed decreased to 0rpm. At the second occurrence in the same wash phase it will go to ERROR mode
	<b>Possible Causes/Procedure</b> <ol style="list-style-type: none"> <li>1. Run Quick Diagnostics Test to check motor drive system.</li> <li>2. Unplug washer or disconnect power.</li> <li>3. Check wire harness connections to the motor, and Central Control Unit (CCU).</li> <li>4. Check the drive system for any worn or failed components.</li> <li>5. Plug in washer or reconnect power.</li> <li>6. Check the CCU by looking for operations of the drive motor.</li> <li>7. Check the drive motor for powered rotations.</li> </ol>
<b>F13</b>	<b>DOOR LOCK ERROR</b>
	Failed attempts to lock the door within 10 seconds. This error code is only shown in whirlpool factory test.
	<b>Possible Causes/Procedure</b> <ul style="list-style-type: none"> <li>■ Door lock mechanism is broken or removed from door.</li> <li>■ Door switch/lock unit failure.</li> </ul> <ol style="list-style-type: none"> <li>1. Run Quick Diagnostics Test to check motor drive system.</li> <li>2. Unplug washer or disconnect power.</li> <li>3. Check door switch/lock unit.</li> <li>4. Check the wire harness connections to the door switch/lock unit and Central Control Unit (CCU).</li> </ol>
<b>F14</b>	<b>EEPROM ERROR</b>
	A communication error between the Central Control Unit (CCU) and the EEPROM onboard the CCU occurred.
	<b>Possible Causes/Procedure</b> <ul style="list-style-type: none"> <li>■ A power surge may cause this error.</li> </ul> <ul style="list-style-type: none"> <li>– Unplug washer or disconnect power for two minutes.</li> <li>– Verify CCU operation by running a Quick Diagnostic Test or any cycle.</li> </ul>

<b>F21</b>	<b>SERIAL COMMUNICATION ERROR</b>
	The communication between the Central Control Unit (CCU) and the user interface board (UI) cannot be sent correctly.
	<b>Possible Causes/Procedure</b> <ol style="list-style-type: none"> <li>1. Run Quick Diagnostics Test to check the User Interface boards and motor.</li> <li>2. Unplug washer or disconnect power.</li> <li>3. Check wire harness connections to the user interface and Central Control Unit (CCU). <ul style="list-style-type: none"> <li>– Check connections of the CCU board within the housing.</li> <li>– Make sure all grounding switches are engaged.</li> </ul> </li> <li>4. Check that the serial harness at the UI.</li> <li>5. Plug in washer or reconnect power.</li> </ol>
<b>F22</b>	<b>LOADS DETECTED DURING CLEAN WASHER CYCLE</b>
	The load is detected in the drum during the start of clean washer cycle.
	<b>Possible Causes/Procedure</b> <ol style="list-style-type: none"> <li>1. Make sure that there is no load in the drum. If the drum is empty.</li> <li>2. Rotate drum by hand to check for any binding of the spin basket. Possibility of clothing stuck between spin basket and outer tub or the rear seal may not be seated flush against rear bearings.</li> <li>3. Check the drum's fixation.</li> </ol>
<b>F23</b>	<b>PRESSURE SWITCH ERROR</b>
	The wash level and level heater safety are switched on at the same time
	<b>Possible Causes/Procedure</b> <ol style="list-style-type: none"> <li>1. Unplug washer or disconnect power.</li> <li>2. Check wire harness connections to pressure switch and Central Control Unit (CCU).</li> <li>3. Check connections of the CCU board within the housing.</li> <li>4. Check the pressure switch for worn or failed conditions.</li> </ol>
<b>F24</b>	<b>VALVES LEAKAGE/OVERFLOW FAILURE</b>
	Overflow level has been reached for more than 5 times, but each period is shorter than 2 seconds.
	<b>Possible Causes/Procedure</b> <ol style="list-style-type: none"> <li>1. Check the drain hose and make sure it is not plugged or kinked.</li> <li>2. Remove hose from pressure switch. Dislodge any debris build up in the hose inside the outer tub.</li> <li>3. Unplug washer or disconnect power.</li> <li>4. Check wire harness connections to the drain pump, pressure switch, water inlet valve, and Central Control Unit (CCU).</li> <li>5. Check/clean drain pump filter of foreign objects.</li> <li>6. Check for drain pump failure.</li> <li>7. Check the inlet valve for proper shut off.</li> <li>8. Check the pressure switch for proper operation.</li> </ol>

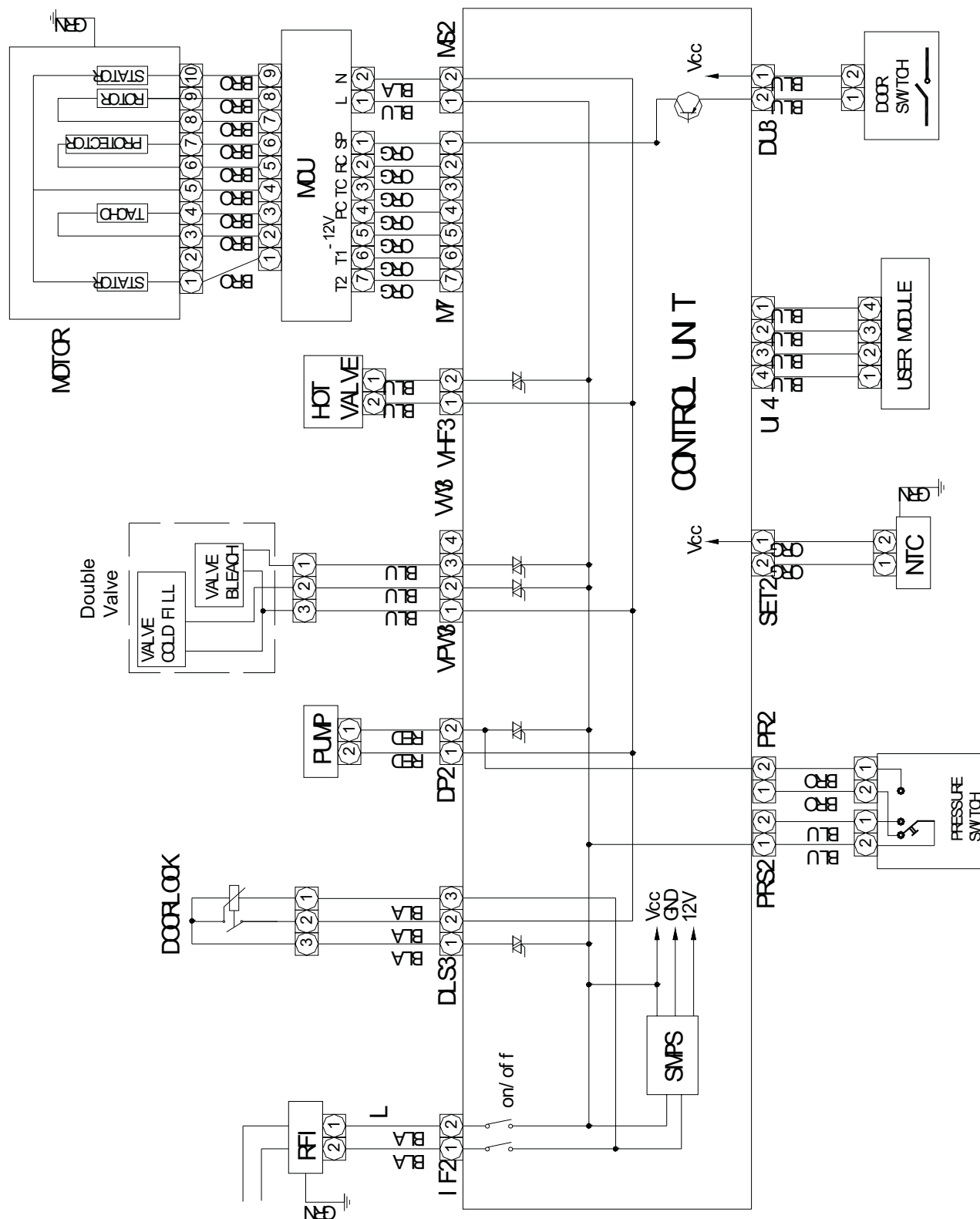
<b>F26</b>	<b>PUMP DRIVE SYSTEM ERROR</b>
	When the connection between pump and the Central Control Unit (CCU) is lost during cycle drain
	<b>Possible Causes/Procedure</b> 1. Verify CCU operation by running a Quick Diagnostic Test or any cycle. 2. Unplug washer or disconnect power. 3. Check wire harness connections to the pump and Central Control Unit (CCU). 4. Plug in washer or reconnect power.
<b>F27</b>	<b>MOTOR CONTROL UNIT ERROR</b>
	Motor reversing error
	<b>Possible Causes/Procedure</b> 1. Verify the shipping system including shipping bolts, spacers and cables are removed. 2. Perform Quick Diagnostic Test. 3. Unplug washer or disconnect power. 4. Check wire harness connections between the drive motor, motor control board, and between the Central Control Unit (CCU).
<b>F28</b>	<b>MOTOR CONTROL UNIT ERROR</b>
	Motor High speed switch error
	<b>Possible Causes/Procedure</b> 1. Verify the shipping system including shipping bolts, spacers and cables are removed. 2. Perform motor Quick Diagnostic Test 3. Unplug washer or disconnect power. 4. Check wire harness connections between the drive motor, motor control board, and between the Central Control Unit (CCU).
<b>F29</b>	<b>DOOR SWITCH ERROR</b>
	Door is not detected to be open and close for 3 continuous cycles.
	<b>Possible Causes/Procedure</b> 1. Power on the machine, and rotate knob to any cycle position, open the door and then close. Then press start button to continue to see if the error cleared. If the failure display condition still exists, go to step 2. 2. Run Quick Diagnostics Test to check door lock system. 3. Unplug washer or disconnect power. 4. Check the electrical connections at the side of door switch and the side of CCU, to make sure the connection is correct. 5. Verify if the switch contacts are stuck closed. If closed and the door is open, replace the door switch mechanism. 6. Plug in washer or reconnect power. 7. If the above does not correct the problem, go to step 6 8. Unplug washer or disconnect power 9. Replace door switch 10. Replace CCU
<b>F30</b>	<b>DOOR LOCK BROKEN OR DOOR SWITCH ERROR</b>
	If it has been detected that door switch is open while the door is locked for more than 2 seconds.
	Door switch open while door is locked. 1. Push the door and check if it is completely closed. 2. Verify CCU operation by running a Quick Diagnostic Test or any cycle. 3. Verify if the switch contacts are stuck open. If open and the door are closed, replace the door switch mechanism.

**Fod****SUDS LOCK (OVERDOSE OF DETERGENT  
DETECTED DURING THE WASH CYCLE)**

If suds are detected continuously by the pressure switch during drain or spin, washer will enter Suds Detection mode. The washer will fill with 3/4 gallon (2.67 Liters) of water, then rest for 10 minutes with no tumbling. Washer will then drain. If error occurs during spin cycle, the unit will then start spinning.

**Possible Causes/Procedure**

- If too much detergent was used:
  - Run the unit through a RINSE/SPIN cycle.
  - Run a NORMAL cycle without adding any detergent.
- This should clear the unit of the excess detergent.
  1. Check the drain hose and make sure it is not plugged or kinked.
  2. Is the drain standpipe higher than 9 feet, This can cause pump cavitations resulting in same failure code.
  3. Unplug washer or disconnect power.
  4. Check wire harness connections to the drain pump, pressure switch, and Central Control Unit (CCU).
  5. Check/clean drain pump filter of foreign objects.
  6. Plug in washer or reconnect power.
  7. Check drain pump.
  8. Check the pressure switch and pressure switch hose.
  9. Verify CCU operation by running a Quick Diagnostic Test or any cycle.



## WIRING DIAGRAM