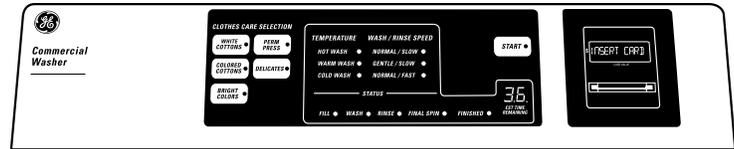




GE Appliances

Technical Bulletin SmartCard System

WNCJ2050AWC
WNCK2050AWC
Commercial SmartCard Washer



⚠ WARNING

TO REDUCE THE RISK OF ELECTRICAL SHOCK:

- The power must be disconnected before servicing by unplugging the machine or disconnecting the circuit breaker.
- The machine must be electrically grounded through the grounding lead in the three-prong power cord. The cord must be plugged into a properly installed and grounded appliance outlet. If local codes require an additional ground connection, use a 16-gauge or larger wire to connect the washer cabinet to an established ground. In all cases the grounding method must comply with all local codes and ordinances.

IMPORTANT - RECONNECT ALL GROUNDED DEVICES

IF GROUNDING WIRES, SCREWS, STRAPS, CLIPS, NUTS OR WASHERS USED TO COMPLETE A PATH TO GROUND ARE REMOVED FOR SERVICE, THEY MUST BE RETURNED TO THEIR ORIGINAL POSITION AND PROPERLY FASTENED.

IMPORTANT SAFETY NOTICE

THIS INFORMATION IS INTENDED FOR USE BY INDIVIDUALS POSSESSING ADEQUATE BACK-GROUNDS 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.

This document provides the following technical information for GE SmartCard washer models WNCJ2050 and WNCK2050:

- Introduction
- Features
- Accessing Components
- Troubleshooting and Service Information
- Wiring Diagram

Introduction

The GE models WNCJ2050 and WNCK2050 introduce SmartCard technology to the GE commercial laundry line. SmartCard technology allows commercial laundry establishments and customers to conduct commercial transactions without hard currency. This technology uses a memory chip based card that can store all the necessary transaction information and provides the consumer great convenience and flexibility. The SmartCard system also provides owners of commercial establishments improved security and added managerial features as well as greater flexibility.

To use the card, the user would insert the card into a special central vending station along with a money

deposit that will credit the SmartCard. The machine encodes credit for the amount of money deposited onto the card. The user then takes the card to the washer, inserts the card and selects the wash cycle. Based on the cost of the cycle, the card reader in the washer deducts that amount from the card. When the total amount on the card has been used, the card is inserted back into the vending station where additional credit may be added to the card for the amount of money deposited.

GE Washer WNCJ2050 and WNCK2050 contain a SmartCard reader located to the right of electronic Control Panel. WNCJ2050 uses the BridgePoint SmartCard control reader. WNCK2050 uses the ESD SmartCard control reader. A keypad electronic washer control has been added to the model line to improve ease of use and serviceability. The main wash functions are still accomplished through a two-speed motor, hot and cold water valves and a pump. The components are controlled by the electronic control, the dual pressure switch, and the keypad selector switches. The L3D electronic control consists of a printed circuit board, transformer and housing.

As detailed in the product warranty, the SmartCard control reader is serviced by the reader's original equipment manufacturer. In cases where the field service diagnostics indicates the error code EO (serial communication – external), the user should contact the reader original equipment manufacturer for service at the following numbers:

Model WNCJ2050 BridgePoint: 1-800-562-5875

Model WNCK2050 ESD: 1-770-425-6298

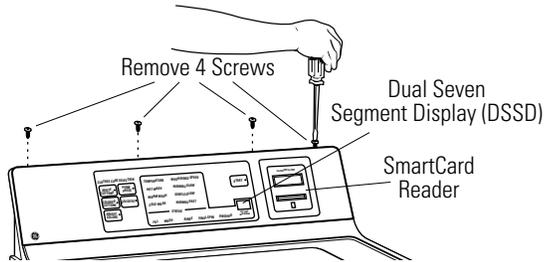
Features

- Super Plus 2.7 cu. ft. Capacity
- 3 Wash/Spin Speed Combinations
- 3 Wash/Rinse Temperatures
- Automatic Water Levels
- Digital Cycle Countdown with LED indicators
- 5 Wash Cycles: Cottons - White, Colored; Bright Colors; Permanent Press; Delicates
- BridgePoint SmartCard Reader with Alphanumeric Display and Control Card (WNCJ2050)
- ESD SmartCard Reader with Alphanumeric Display and Control Card (WNCK2050)
- Lid Instructions

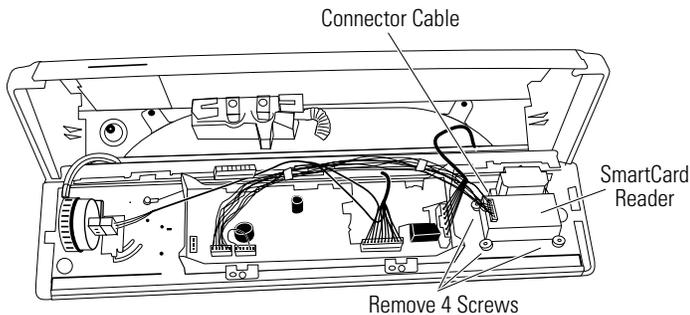
Accessing Components

SmartCard Reader – Removal and Replacement

1. Remove four screws from top panel and pull forward.



2. Remove the four corner screws from the SmartCard Reader.
3. Remove connector cable from reader.
4. Reverse the above procedure to reinstall.



Electronic Control Board – Removal and Replacement

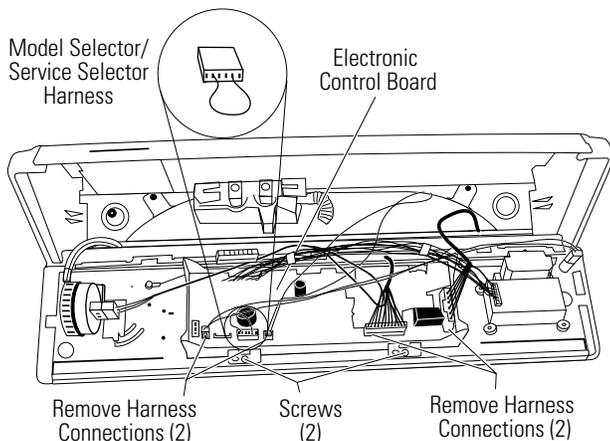
1. Follow step 1 above.
2. Remove 4 harness connections. Remove and retain the model selector harness plug for reassembly.
3. Remove 2 screws (1/4-in) from the control board.

CAUTION: To prevent electrostatic discharge, ground yourself to the washer cabinet or use an ESD wristband.

4. Remove the electronic control board.

Note: When reassembling, align the LEDs with the appropriate control panel indicators.

5. Reverse the above procedure to reinstall.



Field Service Mode

The Field Service Mode for L3D controls allows the field service technician to test the inputs and outputs of the control. It also allows the technician to step through the test cycle and operate components on the washer.

The Field Service Mode can be entered manually or by inserting a special Service Mode card (available to commercial laundry owners) into the SmartCard reader.

Manual entry into the Field Service mode requires the Model Selector harness WD21X10026, to be installed into the L3D control. This is the Service Selector harness. To install the Service Selector harness, disconnect power to the machine and remove the currently installed Model Selector harness. Save the removed Model Selector harness for reinstallation after service. Install the Service Selector harness into the control board and reconnect power to the machine. **Note:** When the service operation is completed, remove the Service Selector harness and reinstall the previous Model Selector harness.

After reconnecting power, the L3D control test cycle is entered by pressing and holding the **White Cotton** and the **Start** button simultaneously for 3 seconds. As soon as the test cycle is entered, the control will power the Dual Seven Segment Display (DSSD) to output the letters Fd (Field Service Diagnostics).

Manual entrance into Field Service mode will be restricted to the time period of 15 seconds after Power-On-Reset of the L3D electronic control. Following this time, the key sequence method of entry into the service mode will be disabled.

The service mode may also be entered by receiving the appropriate command via the serial communication port using the Service Mode Card. Entry into the Field service mode will be allowed at any time the machine is powered and in the idle state.

When any of the above buttons are pressed or when the pressure switch is pushed or contacted, the control will beep for 0.5 seconds.

The initial step after entering service mode for the L3D electronic control will be defined as Step 0. This will signal the DSSD to output Fd and the control will light all LEDs. The following table gives required functions for subsequent steps. To proceed to the next step, press the **Color Cottons** pushbutton. To return to the previous position, press the **White Cottons**.

| | DSSD | |
|-----------|--------|-------------------------|
| Position | Output | Function |
| 0-Initial | Fd | LED Check |
| 1 | ** | Model Code |
| 2 | E# | Error Codes |
| 3 | H | Hot Water Valve Active |
| 4 | C | Cold Water Valve Active |
| 5 | AL | Slow Agitate (Dry) |
| 6 | AH | Fast Agitate (Dry) |
| 7 | P | Pump |
| 8 | SP | Spin |

* → Indicates model number

→ Indicates number of error code if there is more than one error, each error will display for 2 seconds, followed by the next error)

This feature holds true for all tests with exception of the serial communication test. The serial communication test can be run only once due to the limited time required to run the test. Once the serial communication test has been run, the operator must exit and reenter the mode to repeat the test.

The lid switch will affect the LEDs by deactivating any active LED in the service mode for L3D control when the lid is raised. This allows the technician to determine if the switch is working.

Service Mode Error Codes

| | |
|----|---------------------------------------|
| E1 | EEPROM Error |
| E2 | Thermistor Error |
| E3 | Flood Condition Detected Error |
| E4 | Slow Pump Error |
| E5 | Never Fills Error |
| E6 | Pump Detection Circuit Error |
| E7 | Pushbutton Error (shorted pushbutton) |
| E8 | Pressure Switch Error |
| E9 | Serial Communication – L3D Internal |
| E0 | Serial Communication – External |

If you are in the Error Codes Function Display and you press the **Start** pushbutton, then the control will clear all errors.

If you are in the Model Code Function Display and you press the **Start/Pause** pushbutton, the control will display the EEPROM Revision contained in the EEPROM only while the button is depressed.

If you are in the Hot Water Valve Active Display and you press the **Start/Pause** pushbutton, the control will display the ROM Revision of the software only while the button is depressed.

The service mode will allow the technician to operate the washer in dry agitate. However, if the washer is placed in either agitate function during the diagnostics and the **Start** pushbutton is pressed for 2 seconds the dry agitate will become wet agitate. This wet agitate stops the motor, and energize the cold water valve until the pressure switch is made. To determine if the pressure switch is working correctly, the control turns on wash temperature LEDs in sequential order from the smallest load size LED to the largest load size LED. For example, the Cold Wash size LED will represent a small load and the Hot Wash size LED represent a full basket of water. After the tub has reached the full basket, then the washer resumes agitation.

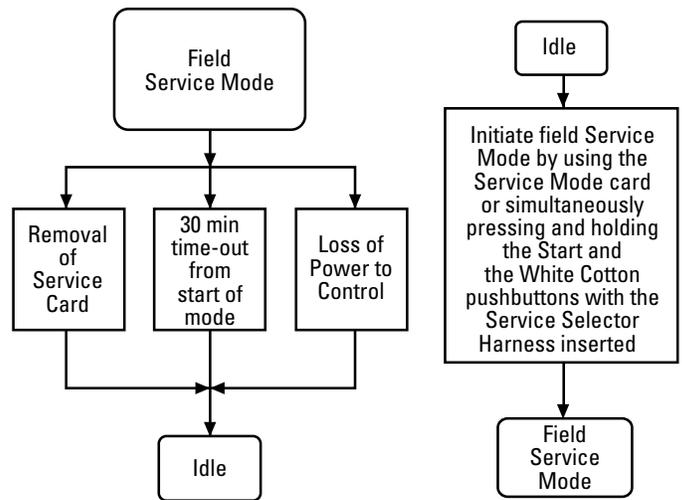
When advancing through the service mode functions, energizing LEDs and the accompanying beeps will occur immediately. However, a 0.5-second delay will occur before initiating the new function. The sequence of events are: the previous function will stop; the LED for the previous function will deactivate; the LED for the new function will activate and the beeper will beep; one (1) second will pass and the new function will begin. This will allow the technician to hear one function stop and another start.

Termination of the Service Mode can be Accomplished in Three Ways:

1. The user may remove power by unplugging the unit.
2. The control will exit the S1 – Field Service Mode 30 minutes after the beginning of the Mode.
3. Removal of the Service Mode Card

By removing the Service Mode Card, the DCR will recognize that the service mode is terminated. The DCR will transmit a Stop command to the L3D control to return the L3D to the idle state.

L3D Field Service Mode Entrance/Exit



Diagnostics

The control provides diagnostics to inform the operator of the current status of the washer. The LEDs displayed to indicated the fault will flash at a rate of 1 hertz.

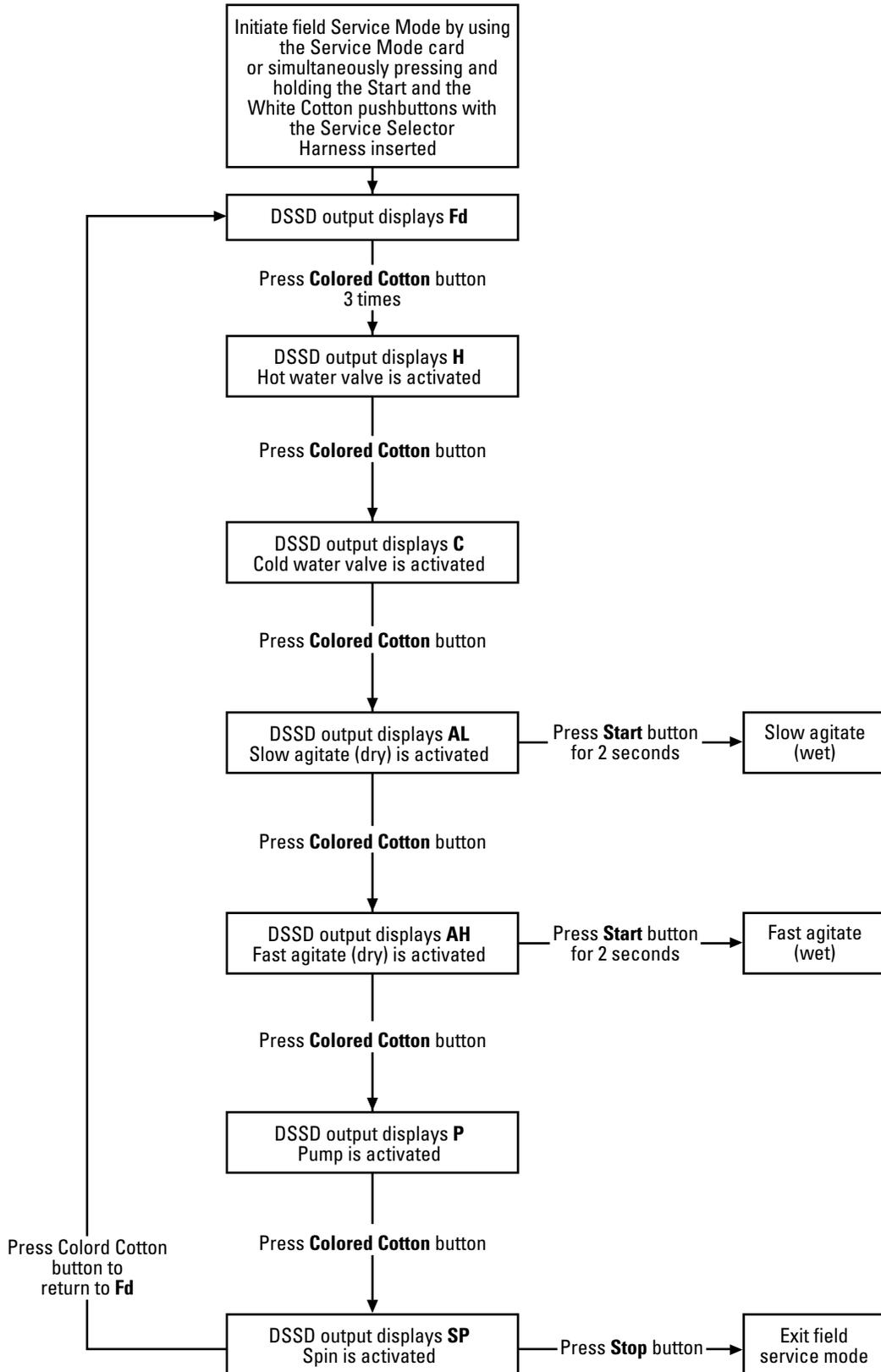
Serial Communication Diagnostic Test

To perform the serial communication diagnostic test, the L3D control will issue a request to the DCR for its software version number. Verification of the transmitted packet data will confirm the serial communication hardware on the L3D is functional. Alternatively, reception of a machine status request command from the DCR will also be considered sufficient to demonstrate functional serial communication hardware. If no status request is received and there is either no response to the DCR version number request or the response is invalid, then an external communication error will be assumed, generating a E0 error code on the DSSD.

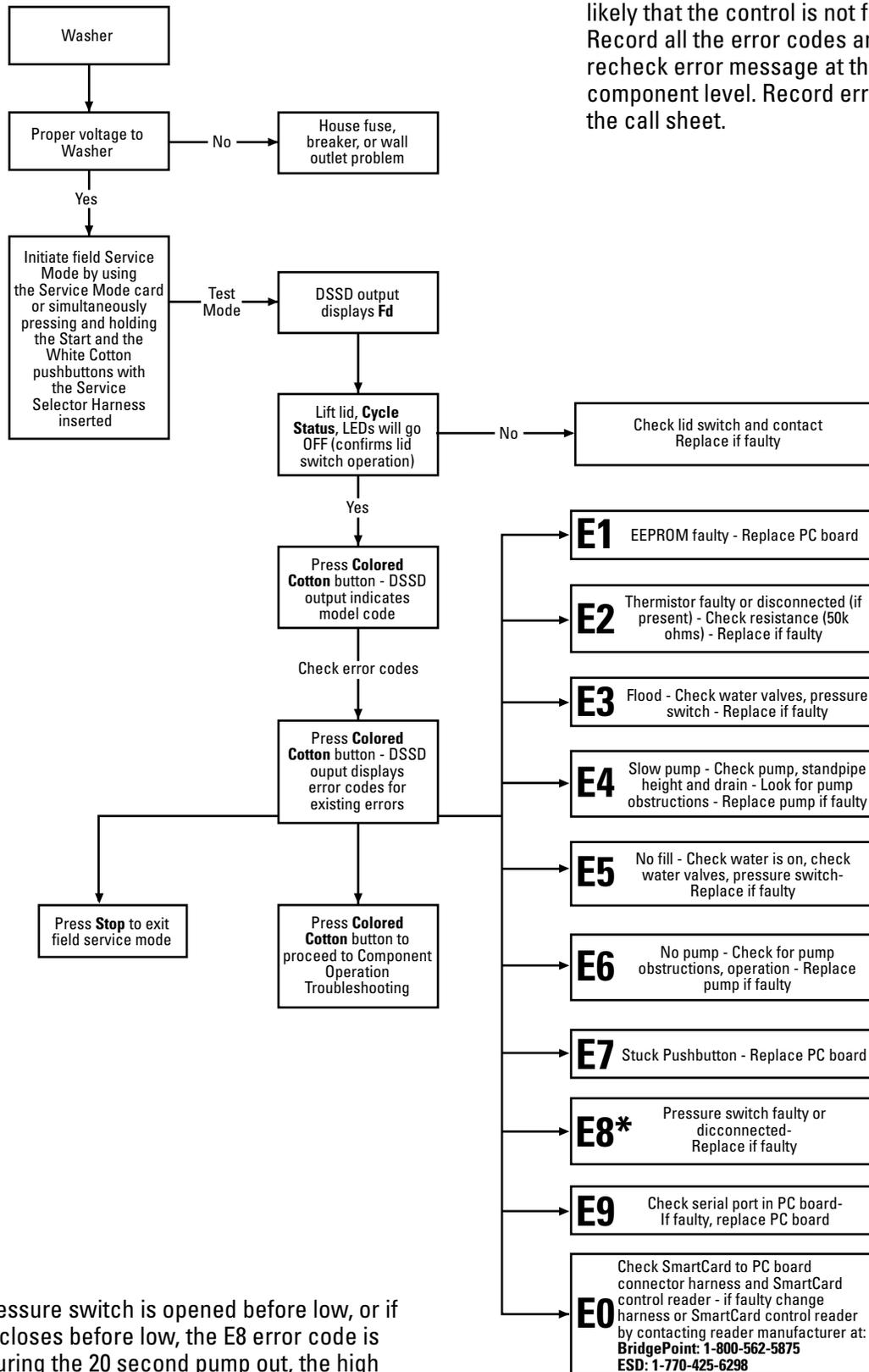
If the external communication test fails, the L3D control will perform a loop-back test by verifying the transmitted packet data is also seen upon the Rx pin on the micro-processor. A failure in the loop-back test indicates a potential failure on the L3D hardware or a short circuit on the Data Comm I/O line, yielding an E9 fault.

Troubleshooting Flowcharts

Component Operation Troubleshooting



Error Code Troubleshooting

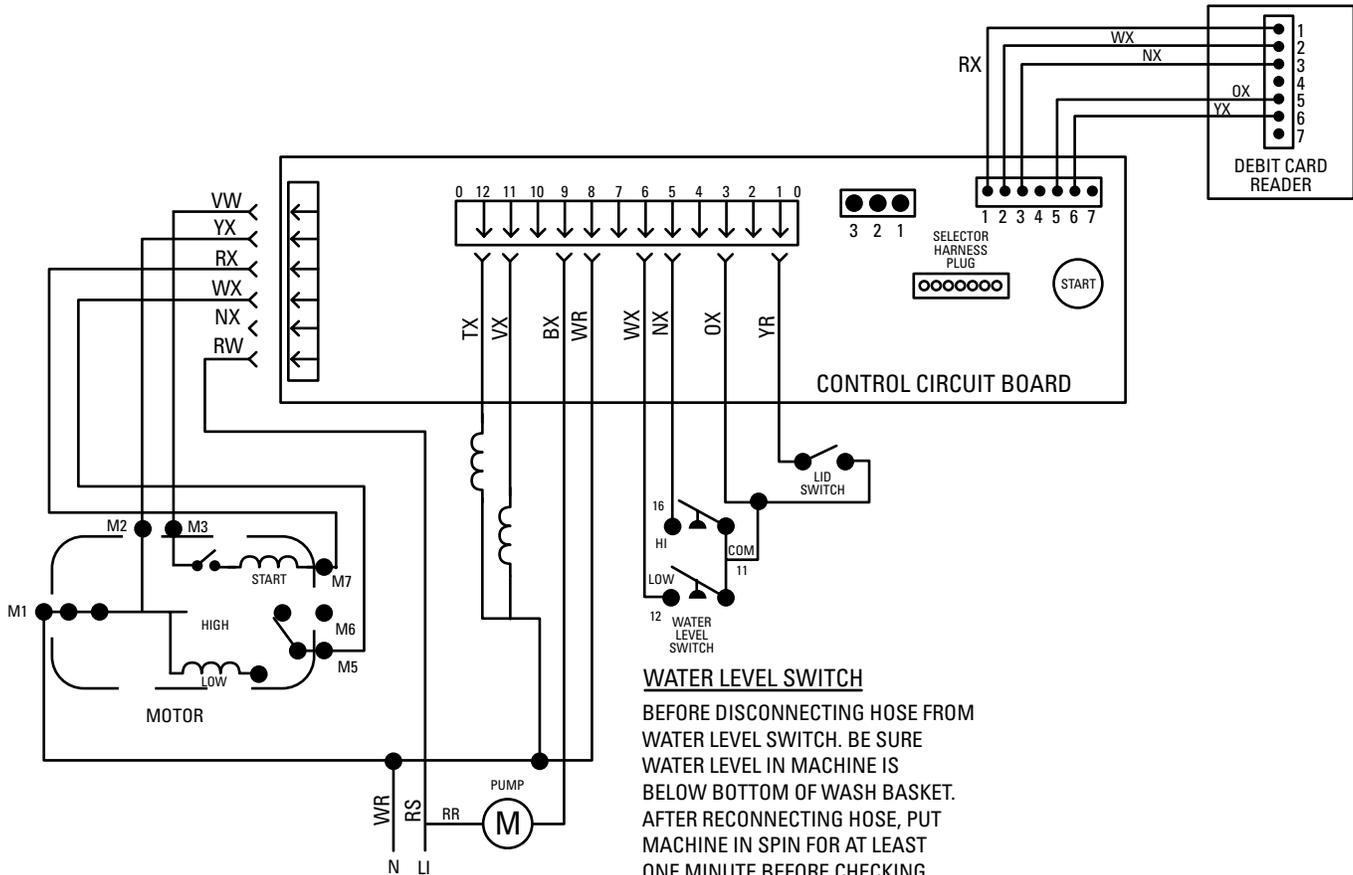


NOTE: If control is operating, it is likely that the control is not faulty. Record all the error codes and recheck error message at the component level. Record errors on the call sheet.

*If high level pressure switch is opened before low, or if high pressure closes before low, the E8 error code is displayed. If during the 20 second pump out, the high pressure switch does not reset (opened to normally closed), E8 is generated.

Wiring Diagram

Selector harness plug options:
 09 for short wash cycles
 01 for long wash cycles
 14 Service Selector Harness



WATER LEVEL SWITCH

BEFORE DISCONNECTING HOSE FROM WATER LEVEL SWITCH. BE SURE WATER LEVEL IN MACHINE IS BELOW BOTTOM OF WASH BASKET. AFTER RECONNECTING HOSE, PUT MACHINE IN SPIN FOR AT LEAST ONE MINUTE BEFORE CHECKING OPERATION OF SWITCH.

| COLOR CODE | | | |
|------------|----------|---------|--------|
| LETTERS | COLOR | LETTERS | COLOR |
| AX | LT. BLUE | RX | RED |
| BX | BLACK | SX | GRAY |
| CX | BROWN | TX | TAN |
| NX | DK. BLUE | VX | PURPLE |
| OX | ORANGE | WX | WHITE |
| PX | PINK | YX | YELLOW |

THE "X" INDICATES ONE SOLID COLOR-NO TRACER. WIRES WITH TRACER SHOW BOTH COLORS. EXAMPLE -WR IS WHITE WITH RED TRACER.

GE Commercial Washer Warranty.

Coin-Operated and Smart Card-Operated Models



Parts and service are available from your General Electric Commercial Laundry distributor.

| For The Period Of: | We Will Replace: |
|--|--|
| Three Years From the date of the original purchase | Any part of the washer which fails due to a defect in materials or workmanship. During this limited three-year warranty , you will be responsible for any labor and related service costs. |
| Five Years From the date of the original purchase | The outer tub and inner basket , if either of these parts should fail due to a defect in materials or workmanship, and the cabinet side panels, base and cover , if they should fail due to rust-through. During this limited additional two-year warranty , you will be responsible for any labor and related service costs. |

What Is Not Covered:

- Coin drop meter, coin slide mechanism, coin vault and locks, smart card modules and cards, smart card system accessories.
- Service trips to your place of business to teach you how to use the product.
- Improper installation.
- Failure of the product if it is abused, misused, or used for other than the intended purpose.
- Any and all implied warranties of merchantability and fitness for a particular purpose.
- Replacement of fuses or resetting of circuit breakers at place of business.
- Damage to the product caused by accident, fire, floods or acts of God.
- Incidental or consequential damage caused by possible defects with this appliance.

This warranty is extended to the original purchaser and any succeeding owner for products purchased for commercial use within the USA. In Alaska, the warranty excludes the cost of shipping to your place of business.

Some states do not allow the exclusion or limitation of incidental or consequential damages. This warranty gives you specific legal rights, and you may also have other rights which vary from state to state. To know what your legal rights are, consult your local or state consumer affairs office or your state's Attorney General.

Warrantor: General Electric Company. Louisville, KY 40225

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