GE Appliances

Technical Service Guide

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GE Appliances Front Load Washer

GFWS1705H
GFWS1700H
GFWN1600J
GFWN1300J
GFWH1200H
GFWN1100H
GFW400SCK
GFW450SPK
GFW450SSK

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Service Test Mode

The washer control has a service test mode that can be utilized by the service technician in order to test critical components and to access error codes. This test mode will help the service technician to quickly identify failed or improper operation of washer components.

Caution: Testing is accomplished through built-in test procedures. Unplugging components for testing can damage component connections.

Machine must be in idle mode before entering a test. Idle mode occurs when the washer has completed a cycle. If the cycle is interrupted, the washer will drain water when the power is reapplied. The water must be emptied BEFORE the test mode can be entered. If water remains in the washer, manually drain the washer to empty. A failed water level switch can cause an inability to enter the service test mode.

To enter the test mode:	To exit the test mode:
1. Begin with the washer in idle mode (all LED's on the display off). 2. Press the following key sequence to enter service mode, depending on the model: • Temp -->Delay Wash -->Temp -->Delay Wash • Signal -->Extra Rinse -->Signal -->Delay Rinse • Temp -->Delay Start -->Temp -->Delay Start **NOTE**: The sequence must be done in order. If there are any other button presses or buttons pressed out of order, the sequence must be started from the beginning. Test t01 will show in the display.	1. Press Power button. **NOTE**: Attempting to exit the service test mode by disconnecting the power will result in a locked washer.

Test Mode	Description
t01 Model ID	Verifies (or sets on new board) the proper model ID
t02 Fault Codes	Lists up to 10 control-detected problems
t03 Software ID	Verifies using latest UL code –Control—Inverter software
t04 LED Illumination and Button Test	Verifies that all displays and buttons work
t05 Pump Test	Operates pump
t06 Water level sensor	Fills to all 3 fill levels, then pumps out water
t07 Thermistor/Heater Test	Verifies that both the thermistor and heater work
t08 Steam test	Verifies hot water valve works
t09 Spray test	Verifies cold water valve works
t10 Tumble Test	Verifies washer tumbles (i.e. wash cycle)
t11 Spin Test	Verifies washer spins
t12 Dispenser Test	Verifies dispenser fill works for all four fill modes
t13 EOL Test	Performs factory end-of-line test sequence

Test Mode	Press	Displays	Exit
t01	Start/ Pause	Display defines model id (01-02). Always displays "---" when control board replaced. Proper model must be set when control board replaced. Rotate knob until desired selection is displayed (01-02), then press and hold Start/Pause until beep.	Press Power. Returns to t01
t02	Start/ Pause	Displays the most recent fault code (E00 = none). Repeat pressing Start/ Pause to display up to previous 10 fault codes. Press and hold Start/ Pause to clear all fault codes. (Will then display E00.)	Press Power. Returns to t02
t03	Start/ Pause	Displays software revision numbers. Press Start/Pause to alternate between UL (UL code), Cod (Control code), and InV (Inverter software version)	Press Power. Returns to t03
t04	Start/ Pause	Displays and tests loops on lighting of LEDs and cycle lights. Buttons beep when pressed.	Press Power. Returns to t04
t05	Start/ Pause	Displays P and operates pump for 60 seconds, then returns to t05. Press Power.	Returns to t05
t06	Start/ Pause	Water level test. On entry, the control display the water level frequency. Pressing Start/Pause, Fill water from the cold valve to foam level, then pressing Start/Pause, fill water to main level. Pressing Start/Pause again, fill water to overflow level, after reached, then pumps water out. The water frequency always change follow the water change.	Press Power. Pump runs. Returns to t06
t07	Start/ Pause	Water heater/thermistor test . (Note: Main level switch must be functional.) Fills with water to main level, then operates heater for up to 5 minutes. Displays temperature of water, as heated, in degrees Fahrenheit. After 5 minutes, water pumps out , then returns to t07.	Press Power. Pump runs. Returns to t07
t08	Start/ Pause	Steam test. Turn on the steam water valve and fill the tub until the Steam level reach. The heater be turned on for a maximum of 1 minutes. The 7SD shall show "StE" When timeout expires turn off the heater, pumps out water and returns to t08	Press Power. Pump runs. Returns to t08
t09	Start/ Pause	Turn on the Spray water valve and Drain pump at same time, the drum will spin at 92rpm CCW for 3 minutes. The 7SD shall show "SPr". When timeout expires turn off the spray valve , pumps out water and returns to t09	Press Power. Pump runs. Returns to t09

Test Mode	Press	Displays	Exit
t10	Start/ Pause	Tumble test . Displays tt . Wash basket spins in one direction for 5 seconds, pauses, then spins in the opposite direction for 5 seconds. Repeats until exit initiated. (Note: Beginning direction is random.)	Press Power. Pump runs. Returns to t10
t11	Start/ Pause	Spin speed-low spin/high spin test . Display shows rpm. Pump runs, displays 0, then wash basket ramps to 400 rpm. Press Start/Pause a second time to ramp to 1100 rpm. (Display B00). Press Start/Pause again, on models ramp to 1300 rpm (display D00). Then motor is unpowered, display 0, pump runs, and returns to t11.	Press Power. Pump runs. Returns to t11
t12	Start/ Pause	Dispenser motor/mechanism test . Press Start/Pause to advance. Displays Pdt and fills via prewash compartment. Displays ddt and fills via wash compartment . Displays bdt and fills via bleach compartment. Displays Fdt and fills via fabric softener compartment . (Note: If main level reached during test, dispenser operation stops, pump runs, and returns to t12.)	Press Power. Pump runs. Returns to t12
t13	Start/ Pause	EOL test sequence. Not used for service. Press Power.	Returns to t13

Fault Codes

Fault Code	Description	Problem	Possible Cause/Action
E22	Fill timeout - No fill/slow fill	Fill time exceeds 8 minutes.	• Ensure manual water supply valves are fully open. • Inspect inlet hoses for kinks/obstructions. • Inspect water valve screens for restriction. • Check water valve functions – t06 If above steps do not clear the problem replace solenoid water valve.
E23	Flood protect drain	In run state, any time the overflow be detected	• Check water valve functions –t06 • Check water sensor functions – t06 • Off balance loads with heavy vibration can cause code - retry before replacing any component.
E31	Drain timeout	Slow drain • machine will have water • not full.	• Check drain pump - t05. • Check drain pump for restriction. • Check for drain restriction. • Drain height over 96-in. can cause code.
E38	Dispenser error	Correct reservoir is not found and 8 switches are seen when motor is running.	• Check dispenser - t12 (Note: Do not unplug connectors from dispenser motor unless replacing.)
E39	Dispenser timeout	No switches found in 45 seconds.	• Check dispenser - t12 (Note: Do not unplug connectors from dispenser motor unless replacing.)
E42	Drive motor • Instantaneous current	Motor excess current draw.	• Check drive motor - t10 tumble, t11 spin, t13 spin • Power down (unplug) washer, wait 30 seconds and retry. If code reoccurs, check drive motor windings. If motor windings OK, replace inverter. (There may be a burned spot on the inverter.) (NOTE: Cannot occur with open motor winding.)

Fault Code	Description	Problem	Possible Cause/Action
E45	No speed feedback	Motor speed lost	• Check Motor - t10 tumble, t11 spin, T13 spin • Check mechanical faults - check belt, basket, bearing - rotate basket by hand. • Power down (unplug) washer, wait 30 seconds and retry - if reoccurs, replace inverter. (Note: Cannot occur with open winding.)
E46	Drive motor - over temperature	Inverter over temperature.	• Check Motor - t10 tumble, t11 spin, T13 spin. • Power down (unplug) washer, wait 30 seconds and retry - use whites cycle sanitize temperature - if reoccurs, replace drive motor. (Note: Cannot occur with open winding.)
E47	Heat sink - over temperature	Inverter over temperature.	• Check Motor - t10 tumble, t11 spin, T13 spin. • Power down (unplug) washer, wait 30 seconds and retry - use whites cycle sanitize temperature - if reoccurs, replace drive motor. (Note: Cannot occur with open winding.)
E48	Drive motor - open	Open motor phase.	• Check Motor - t10 tumble, t11 spin, T13 spin. • Check motor for open winding - if OK, replace inverter. (Note: Occurs with open winding.)
E4A	Under volts	Under volts - DC bus voltage (inverter).	• Check Motor - t10 tumble, t11 spin, T13 spin. • Power down (unplug) washer, wait 30 seconds and retry - if reoccurs, replace inverter. (Note: Cannot occur with open winding.)
E4B	Power up problems	Software/hardware problems.	• Check Motor - t10 tumble, t11 spin, T13 spin. • Check motor windings - internal short • Power down (unplug) washer, wait 30 seconds and retry - if reoccurs, replace inverter. (Note: Cannot occur with open winding.)

Fault Code	Description	Problem	Possible Cause/Action
E4C	Over volts	Over volts - DC bus (inverter).	• Check Motor - t10 tumble, t11 spin, t13 spin. • Power down (unplug) washer, wait 30 seconds and retry - if reoccurs, replace inverter. (Note: Cannot occur with open winding.)
E50	Drive/Control Interface system	Unexpected Motor Fault	• Check Motor - t10 tumble, t11 spin, t13 spin. • Power down (unplug) washer, wait 30 seconds and retry - if reoccurs, replace inverter. (Note: Cannot occur with open winding.)
E52	Main control wake-up error	Lost communication between control and drive motor after initial success.	• Check Motor - t10 tumble, t11 spin, t13 spin. • Check connections/cables between main control and inverter. • Power down (unplug) washer, wait 30 seconds and retry - if reoccurs, replace inverter. (Note: Cannot occur with open winding.) • Main control board can cause code in limited circumstances, as loose plug on board.
E54	No motor response	Lost communication between control and drive motor.	• Check Motor - t10 tumble, t11 spin, t14 spin. • Check connections/cables between controls. • Power down (unplug) washer, wait 30 seconds and retry - if reoccurs, replace inverter.
E56	Electronic control	An unexpected reset has happened	• Non-recoverable error. • Main control board must be replaced.
E57	Checksum failure	Software error occurs - checksum failure.	• Non-recoverable error. • Main control board must be replaced.
E58	Communication failure	Communication error occurs.	• Non-recoverable error. • Main control board must be replaced.
E60	Door lock switch failure	Switch failure occurs during lock.	• Power down (unplug) machine, wait 30 seconds and retry. • Check wiring and connections between door lock
E61	Door unlock and main control switch failure	Switch failure occurs during unlock.	• Power down (unplug) machine, wait 30 seconds and retry.

Fault Code	Description	Problem	Possible Cause/Action
E62	System contact failure	Load failure occurs. Heater/pump/ pressure switch/ door lock/water valves/dispenser motor.	• Power down (unplug) machine, wait 30 seconds and retry. • This error code found a shorted component . • Check integrity of wiring and connections - replace harness if necessary. • Check integrity and connections of all loads and replace as necessary.
E63	Unexpected open door	Switch failure occurs during wake-up.	• Power down (unplug) machine, wait 30 seconds and retry. • Check wiring and connections between door lock and main control. • Check door lock switches and solenoid. • Replace main control if wiring, switches, and solenoid test functional.
E64	Unexpected open door while running	Switch failure occurs during cycle.	• Power down (unplug) machine, wait 30 seconds and retry. Check wiring and connections between door lock and main control. • Check door lock switches and solenoid. • Replace main control if wiring, switches, and solenoid test functional.
E65	Water level sensor failure - foam	Pressure sensor frequency out of range.	• Check integrity of wiring and connections between main control and water level sensor. • Check integrity of water level sensor t06 - replace if necessary. • Replace main control if actions do not resolve.

Fault Code	Description	Problem	Possible Cause/Action
E66	Water temperature sensor open	Water temperature sensor open.	• Check water temperature sensor - t07 • Check integrity of wiring and connections between main control and water temperature sensor. • Check integrity of water temperature sensor - replace if necessary.
E67	Water temperature sensor shorted	Water temperature sensor shorted.	• Check water temperature sensor - t07. • Check integrity of wiring and connections between main control and water temperature sensor. • Check integrity of water temperature sensor - replace if necessary.

NOTE: It's important to note fault codes should only be used to help identify those components which require testing. Never replace a part based solely on an fault code. The control can generate a false fault if the right conditions exist . Use the code only as a reference and always check the component before replacing.