TLS1 Washer:

Fault Code: 1. **Fault Name**: Lock Monitor. **Fault Description**: This fault is set if the motor shaft speed exceeds 45 RPM for 5 seconds while in spin mode and unlocked. This fault can also occur if the basket is manually spun by hand. **Repair Action**: Check the lid lock using service mode spin test 14. Check lid lock harness connectors both at the main board and at the lid lock assembly. Measure the resistance at motor connector between each motor phase winding and ground (green/ yellow wire). Ensure that it is an open circuit.

Fault Code: 2. **Fault Name**: Lid Monitor. **Fault Description**: Control did not get lid closed signal from switch while motor was moving. Could mean the switch didn't close or control didn't get the signal because of lack of connection. **Repair Action**: Replace lid lock if this happens frequently.

Fault Code: 3. **Fault Name**: Locked Rotor Monitor. **Fault Description**: For 5 straight seconds control not seeing signal changes indicating the motor is turning while trying to spin. Could mean the motor isn't rotating or the control didn't get the signal because of lack of connection. **Repair Action**: Physically check the washer for anything preventing motor movement. Measure the resistance of each motor phase winding. Make sure resistances match the values on the wiring diagram. Verify hall sensor is connected to the main harness. Put washer in service mode and run test 14 (Spin). If hall sensor is bad or disconnected, the basket will start to spin normally and then stop spinning after approximately 5 seconds. Ensure hall sensor is properly connected and positioned on the motor. If basket spins for approximately 15 seconds, the hall sensor is most likely NOT the cause. For belt and pulley drives, check that the microfarads of the start capacitor matches the value on the wiring diagram. TCO should reset in approximately 45 minutes. If TCO is tripped, make sure motor moves freely and that nothing is jamming it. Replace motor if it does not. If direct drive, replace inverter board. If belt and pulley drive, replace main board.

Fault Code: 4. **Fault Name**: Reset Monitor. **Fault Description**: Control is resetting the software by itself due to criteria it believes could resolve itself upon reset. **Repair Action**: This Fault can be set any time the unit is powered on including exiting service mode. No repair necessary.

Fault Code: 5. **Fault Name**: Mode Shifter. **Fault Description**: Control didn't see the transition from Agitate to Spin or vice-versa in the time required. Could mean the shift didn't occur or control didn't get the signal because of lack of connection. **Repair Action**: If lid does not lock use service mode test 13 to confirm lid switch is functional. Use service mode test 14 to put the unit into spin mode. Check resistance of the mode shifter motor. Make sure it matches the value on the wiring diagram. Check continuity of the mode shifter switch. Check mode shifter coupler for damage and the ability to slide in and out freely. Check for 120 VAC to the mode shifter motor at the control connector.

Fault Code: 6. **Fault Name**: Critical Flood Level by pressure. **Fault Description**: Control received an extended period of pressure readings that is nearing over-flow levels. Voltage Output must be present. Could mean water did get that high due to briefly stuck water valve. Voltage output of sensor too high for actual water level because of sensor or water in pressure tube increasing pressure. **Repair Action**: Check pressure tube for pinches where it goes through top cover grommet. Check pressure tube for trapped water. Check water valve operation and for any leaking water valves. Use pressure sensor test 10 to ensure correct pressure sensor operation. Ensure pressure chamber port is free from obstruction using drill bit size 1/16" by hand so as not to drill through the inner wall.

Fault Code: 7. **Fault Name**: Max Fill -- Pressure. **Fault Description**: Fill has stopped due to maximum fill level/ pressure being reached. **Repair Action**: Check pressure tube for pinches where it goes through top cover grommet. Check pressure tube for trapped water. Check for any leaking water valves. Use pressure sensor test 10 to ensure correct pressure sensor operation. This can happen if a large wet load is placed in the washer.

Fault Code: 8. **Fault Name**: Pressure Sensor Loss. **Fault Description**: Determines if appropriate pressure changes are seen during fill. It assumes there is a pressure leak, a clog in the pressure hose/system delaying the increase in pressure, or a significant amount water leaking out. **Repair Action**: Check to make sure house water supply valves are turned on. Check water valve operation. Check pressure tube for pinches where it goes through top cover grommet. Use pressure sensor test 10 to ensure correct pressure sensor operation. Check pressure tube for trapped water. Ensure pressure chamber port is free from obstruction using drill bit size 1/16" by hand so as not to drill through the inner wall.

Fault Code: 9. **Fault Name**: Lid Switch Redundancy. **Fault Description**: 3 cycles have been completed without any lid opening. **Repair Action**: Open and close the lid to clear the error. Check harness and connectors that go to the lid switch. Use test 13 to ensure system can detect the correct lid state with the Spin and Rinse LEDs. Consumer education that 4 cycles cannot be run back-to-back without opening and closing the lid. If the error will not clear, replace the lid switch.

Fault Code: 10. **Fault Name**: Mode Shift Feedback Monitor. **Fault Description**: Signal feedback state from the mode shifter (agitate or spin) and the state requested by the control are not the same and the basket or agitator is rotating faster than 3-4 RPM. Agitate mode feedback signal is no voltage. **Repair Action**: Check mode shifter coupler for damage and the ability to slide in and out freely. Use test 14 to put the mode shifter into spin and check continuity through the mode shifter switch. Use ohm meter to ensure harness shows continuity to the mode shifter from the control. Check resistance of mode shifter motor (approximately 5.7K ohms). Check for 120VAC to the mode shifter motor at the control connector.

Fault Code: 11. **Fault Name**: Clock Monitor. **Fault Description**: AC power line frequency is not 60Hz. **Repair Action**: Check the frequency of the AC power outlet. If it is more than a few Hz off of 60Hz, notify utility company.

Fault Code: 12. **Fault Name**: Redundant Flood Condition. **Fault Description**: Detected pressure above 18.0". **Repair Action**: Check pressure tube for trapped water. Check each valves operation. (Replace water valve and send back to GE Appliances.) Use pressure sensor test 10 to ensure correct pressure sensor operation. Check pressure tube for pinches where it goes through top cover grommet. Ensure pressure chamber port is free from obstruction using drill bit size 1/16" by hand so as not to drill through the inner wall.

Fault Code: 13. **Fault Name**: Redundant Lid Unlocked. **Fault Description**: System detected washer in spin state with the lid closed, unlocked, and basket speed greater than 26 RPM. **Repair Action**: Check the lid lock using service mode spin test 14. Check lid lock harness connectors both at the main board and at the lid lock assembly. Measure the resistance at motor connector between each motor phase winding and ground (green/ yellow wire). Ensure that it is an open circuit.

Fault Code: 14. **Fault Name**: Lid Lock Failure. **Fault Description**: Signal received by control is indicating the lock will not lock or unlock when requested or the lid switch is indicating open when the signal

received indicated locked. **Repair Action**: Check the lid lock using service mode spin test 14. Check lid lock harness connectors both at the main board and at the lid lock assembly. Check continuity by placing the first probe on the harness side of connector J513 on the main board and the second probe on the matching color wire at the lid lock assembly.

Fault Code: 15. **Fault Name**: Water Temp Sensor Invalid. **Fault Description**: The thermistor is disconnected, not present, or has failed. **Repair Action**: Check thermistor resistance from connector J701 on the control board. Validate the resistance matches the table in mini-manual. Check wiring harness and connections. Replace thermistor.

Fault Code: 16. **Fault Name**: Adaptive Drain/Slow Drain. **Fault Description**: This fault is set when the drain cycle takes longer than expected. **Repair Action**: Check for water in the bottom of the tub. If so drain and try cycle again. Check the basket for excessive friction. Basket should spin freely. If not, find source of friction and remove it. This can also happen if a cycle is started with wet clothes.

Fault Code: 17. **Fault Name**: Dry Load Sense Timeout. **Fault Description**: Dry load sense times out and moves to the next part of the cycle selected. This occurs when the washer is not reaching the target speed within a defined time limit for the load type selected. **Repair Action**: Check for water in the bottom of the tub. If so drain and try cycle again. Check the basket for excessive friction. Basket should spin freely. If not, find the source of friction and remove it This can also happen if a cycle is started with wet clothes.

Fault Code: 18. **Fault Name**: Drain Pump Clearing Algorithm Failed. **Fault Description**: Pressure sensor indicates water in the tub after attempting to drain. **Repair Action**: Fill tub using service mode test 7 and check drain pump operation using service mode test 12. Check drain hose for blockages. Confirm standpipe height is within recommended guidelines. If pump does not operate, check that the resistance of the pump matches resistance table and verify 120VAC while pump is operating at J512. Check pressure tube for pinches where it goes through top cover grommet. Use pressure sensor test 10 to ensure correct pressure sensor operation. Check pressure tube for trapped water. Ensure pressure chamber port is free from obstruction using drill bit size 1/16" by hand so as not to drill through the inner wall.

Fault Code: 19. **Fault Name**: UI State Timeout. **Fault Description**: This will happen if a cycle is paused for greater than 24 hours or if the pressure sensor reads greater than 0.5" while the machine is off for greater than 24 hours. **Repair Action**: Check for leaking water valves. Use pressure sensor test 10 to ensure correct pressure sensor operation. Consumer education on leaving sopping wet items in basket for more than 24 hours. Pausing the machine for greater than 24 hours can cause this. Can be caused by out-of-balance Can be caused by starting a cycle with the "no spin" option selected. Check the output voltage from the pressure sensor to ensure it matches the water level in the basket according to the pressure sensor chart. Check pressure tube for trapped water. Ensure pressure chamber port is free from obstruction using drill bit size 1/16" by hand so as not to drill through the inner wall.

Fault Code: 20. **Fault Name**: Critical Flood Level by Gallons. **Fault Description**: Water volume into the tub exceeded 41 gallons as calculated by the control. 1. Pressure tube is momentarily pinched, has water in it, partial blockage if Flood fault 12 occurs. 2. Low water pressure/flow or permanent pressure system blockage if NO Flood fault 12 occurs. **Repair Action**: Check pressure tube for pinches where it goes through top cover grommet. Check pressure tube for trapped water. Check for any leaking water valves.

Check home water pressure. Check the output voltage from the pressure sensor to ensure it matches the water level in the basket according to the pressure sensor chart.

Fault Code: 21. **Fault Name**: Max Fill -- Gallons. **Fault Description**: Water volume into the tub exceeded 36.3 gallons as calculated by the control. Stops filling. 1. Pressure tube is momentarily pinched or has water in it, partial blockage if Flood fault 6, 7, or 12 occurs. 2. Low water pressure/flow or permanent pressure system blockage if NO Flood fault 6, 7, or 12 occurs. **Repair Action**: Check pressure tube for pinches where it goes through top cover grommet. Check pressure tube for trapped water. Check for any leaking water valves. Check home water pressure. Check the output voltage from the pressure sensor to ensure it matches the water level in the basket according to the pressure sensor chart. If it does not, the control will need to be replaced as the pressure sensor is mounted directly to the control.

Fault Code: 22. **Fault Name**: Out of Balance (OOB) during Dry Load Sense. **Fault Description**: Large wet/OOB load being washed. This is set if OOB condition is detected during dry load sense algorithm. Dry load sense will be abandoned, and wet load sense will be started. **Repair Action**: Check for excessive OOB load. CE on how to distribute load equally balanced, proper cycle/water level. Check the basket for excessive friction or for being excessively out of round. Basket should spin freely and without wobble. If friction is found, remove it. If basket is bad, replace it. Run Drain & Spin cycle to ensure basket reaches final spin speed and the Spin LED does not blink. (A blinking LED indicates that an OOB was detected during final spin). Check to make sure unit is firmly seated on all four legs, doesn't rock, and is leveled. Check that basket assembly is hanging centered up in lid opening. If not, check for proper rod and springs (color) and are properly seated. Check the basket for excessive friction or for being excessively out of round. Basket should spin freely and without wobble. If friction is found, remove it. If basket is bad, replace it. Check speed sensor for loose connection to motor.

Fault Code: 23. **Fault Name**: Critical Lid Lock Failure. **Fault Description**: Cycle cancelled due to inability to reach desired lid lock state. **Repair Action**: Replace lid lock and lid lock harness then run below actions. Check the lid lock using service mode spin test 14 to ensure lid lock operation. Verify that the lid lock is not blocked by any external debris. Check lid switch continuity at J513 on the control. Check continuity of lid lock position. Opened or Closed. Check for proper operation of lid lock. 120VAC while activating. Check lid lock wiring harness from the control to lock assembly.

Fault Code: 24. **Fault Name**: Lid Logic Failure. **Fault Description**: Lid switch failure. This fault is set if the system perceives the lid to be both OPEN and LOCKED for 5 consecutive seconds. **Repair Action**: Replace lid lock and lid lock harness then run below actions. Check the lid lock using service mode spin test 14 to ensure lid lock operation. Check harness and connections from the control to the lid lock assembly for damage and continuity. Run a spin cycle. Pull up on the lid during spin for more than 5 seconds and see if this fault occurs.

Fault Code: 25. **Fault Name**: Pressure Sensor Dropout. **Fault Description**: Pressure is above 6" then drops to less than 1" for 5 seconds without draining. **Repair Action**: Check to make sure house water supply valves are turned on. Check water valve operation. Check for proper drain pipe and stand pipe height. Check pressure tube for pinches where it goes through top cover grommet. Use pressure sensor test 10 to ensure correct pressure sensor operation. Check pressure tube for trapped water. Ensure pressure chamber port is free from obstruction using drill bit size 1/16" by hand so as not to drill through the inner wall.

Fault Code: 26. **Fault Name**: Out of Balance (OOB) Ended Final Spin. **Fault Description**: Washer detected an out of balance load and was unable to reach final target spin speed. **Repair Action**: Run Drain & Spin cycle to ensure basket reaches final spin speed and the Spin LED does not blink. (A blinking LED indicates that an OOB was detected during final spin). Check to make sure unit is firmly seated on all four legs, doesn't rock, and is leveled. Check that basket assembly is hanging centered up in lid opening. If not, check for proper rod and springs (color) and are properly seated. Check that hub nut is tight. Check that the rod and spring are dampening properly. If correct, it will be very difficult to push down and bottom out the basket assembly. Replace rod and spring assembly if they easily are pushed down, reference https://www.youtube.com/embed/emzSusPs_2I?rel=0 Check the basket for excessive friction or for being excessively out of round. The basket should spin freely and without wobbling. If friction is found, remove it. If the basket is bad, replace it. Check belt slippage. Run Drain & Spin cycle (not service mode) with no load, replace belt and clean pulleys if OOB is detected (as indicated by blinking Spin LED). Check for balance ring damage, tub damage, basket damage, rods and springs are properly seated, speed sensor is firmly mounted to the motor and doesn't have excessive play. Check balance ring alignment marks. Reference HL03-19 for specific models/manufacture dates on how to determine proper alignment of the balance ring halves top/bottom. Check water level, supply/restrictions. Supply hose screens, water valve screens, PSI, house supply valves, cycle settings. Proper water level is required for re-distribute prior to final spin. Check speed sensor for loose connection to motor. If washer spins correctly, educate consumer on how to properly load/distribute their clothes and select correct cycle/water level to prevent an OOB. Educate consumers on OOB/random re-distribute of loads, some loads will require manual re-distribute.

Fault Code: 27. **Fault Name**: Water Accessibility. **Fault Description**: This will happen during a cycle if water is left in the tub with the lid open for more than 15 minutes. **Repair Action**: Check for leaking water valves. Use pressure sensor test 10 to ensure correct pressure sensor operation. Consumer education on leaving lid open for more than 15 mins during a cycle. Consumer education on leaving sopping wet items in basket for more than 15 mins. Can be caused by starting a cycle with the "no spin" option selected.

Fault Code: 28. **Fault Name**: Options Knobs Feedback Invalid. **Fault Description**: This fault is set if a cycle is running, and an invalid knob position is detected. **Repair Action**: Make sure knobs are in a valid position. Ensure connector J615 is fully seated and not routed under the knob assembly

Fault Code: 29. **Fault Name**: Suds Lock Abatement Failure. **Fault Description**: Cycle has terminated due to excessive motor current during spin. **Repair Action**: Ensure basket is able to rotate freely. Check inner tub sidewalls for anything that can obstruct basket movement. Consumer education on correct detergent usage. Ensure consumer is using the proper amount of HE detergent.

Fault Code: 30. **Fault Name**: Stuck Button Fault. **Fault Description**: A button is detected as being pressed for more than 60 seconds. **Repair Action**: Check for proper tactile feedback on each button and check to make sure control responds correctly up each button activation. Check for proper alignment in installation of the control board and backsplash. Check the clearance between the button and the backsplash hole.

Fault Code: 31. **Fault Name**: Out of Balance (OOB) Fallback In Final Spin. **Fault Description**: This fault is set if machine is unable to reach terminal speed and the cycle was completed at a lower spin speed during final spin due to OOB. **Repair Action**: Run Drain & Spin cycle to ensure basket reaches final spin

speed and the Spin LED does not blink. (A blinking LED indicates that an OOB was detected during final spin.) Check to make sure unit is firmly seated on all four legs, doesn't rock, and is leveled. Check that basket assembly is hanging centered up in lid opening. If not, check for proper rod and springs (color) and are properly seated. Check that hub nut is tight. Check that the rod and spring are dampening properly. If correct, it will be very difficult to push down and bottom out the basket assembly. Replace rod and sping assembly if they easily are pushed down, reference https://www.youtube.com/embed/emzSusPs_2I?rel=0 Check the basket for excessive friction or for being excessively out of round. Basket should spin freely and without wobble. If friction is found, remove it. If basket is bad, replace it. Check for balance ring damage, tub damage, basket damage, rods and springs are properly seated, speed sensor is firmly mounted to the motor and doesn't have excessive play. Check balance ring alignment marks. Reference HL03-19 on how to determine proper alignment of the balance ring halves top/bottom. Check water level, supply/restrictions. Supply hose screens, water valve screens, PSI, house supply valves, cycle settings. Proper water level is required for re-distribute prior to final spin. Check speed sensor for loose connection to motor. If washer spins correctly, educate consumer on how to properly load/distribute their clothes and select correct cycle/water level to prevent an OOB. Educate consumer on OOB/random re-distribute of loads, some loads will require manual re-distribute.

Fault Code: 32. **Fault Name**: Critical Lid Lock Failure: Can't Unlock Lid. **Fault Description**: Cycle cancelled due to inability to unlock lid. **Repair Action**: Replace lid lock and lid lock harness then run below actions. Check the lid lock using service mode spin test 14 to ensure lid lock operation. Verify that the lid lock is not blocked by any external debris. Check lid switch continuity at J513 on the control. Check continuity of lid lock position. Opened or Closed. Check for proper operation of lid lock. 120VAC while activating. Check lid lock wiring harness from the control to lock assembly.

Fault Code: 33 or 34 or 41 or 42 or 43 or 44 or 45 or 46 or 47 or 48 or 49 or 50 or 51 or 66 or 67 or 68 or 69 or 71 or 72 or 73 or 74 or 75 or 92. **Fault Name**: Inverter Fault. **Fault Description**: Any of these faults can be set if the inverter board reports a fault. **Repair Action**: Run service mode spin test 14 to full completion. If cycle fully completes, no further action required. Check line voltage for 102VAC-132VAC. Check all inverter board harness connections. Check motor TCO continuity at J502 (inverter board). If open, should reset after 45 minutes. Check for continuity through each pair of motor phase windings. If any windings found open, replace motor. If the above repair actions don't clear the fault, replace inverter board.

Fault Code: 35 or 59 or 60 or 61 or 63 or 64 or 87 or 88 or 89 or 90. **Fault Name**: Accelerometer Fault. **Fault Description**: Any of these faults can be set if the accelerometer board reports a fault. **Repair Action**: Run service mode spin test 14 to full completion. If cycle fully completes, no further action required. Check accelerometer board harness connections. If the above repair actions don't clear the fault, replace accelerometer board.

Fault Code: 58 or 93. **Fault Name**: Main Board Component Failure. **Fault Description**: A main board component has failed. **Repair Action**: Replace main board.

Fault Code: 65. **Fault Name**: Pressure Sensor Continuous Gallons Monitor. **Fault Description**: Pressure level is less than 0.5" and more than 26 gallons are in the tub for more than 5 seconds. **Repair Action**: Check to make sure house water supply valves are turned on. Check water valve operation. Check for proper drain pipe and stand pipe height. Check pressure tube for pinches where it goes through top

cover grommet. Use pressure sensor test 10 to ensure correct pressure sensor operation. Check pressure tube for trapped water. Ensure pressure chamber port is free from obstruction using drill bit size 1/16" by hand so as not to drill through the inner wall.

Fault Code: 76. **Fault Name**: Bulk Tank Sensor Failure. **Fault Description**: The bulk tank level sensor is disconnected, not present, or has failed. **Repair Action**: Check bulk tank level sensor harness connections. If the above repair actions don't clear the fault, replace bulk tank sensor.

Fault Code: 78. **Fault Name**: Board Communication API Mismatch. **Fault Description**: The Main Board detects that it doesn't have the same API version as another board. **Repair Action**: Use a SUM module to update unit software.

Fault Code: 86. **Fault Name**: Low Water Pressure. **Fault Description**: Pressure level is not exceeding the min. pressure level for a given tub volume. **Repair Action**: Check to make sure house water supply valves are turned on. Check water valve operation. Check for proper drain pipe and stand pipe height. Check pressure tube for pinches where it goes through top cover grommet. Use pressure sensor test 10 to ensure correct pressure sensor operation. Check pressure tube for trapped water. Ensure pressure chamber port is free from obstruction using drill bit size 1/16" by hand so as not to drill through the inner wall.

Fault Code: 91. **Fault Name**: UI - Main Board Heartbeat Timeout. **Fault Description**: No communication between UI and Main Board for 10 seconds. **Repair Action**: Check UI harness connections. Check Main Board to UI voltages.