TLS2 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 (determined by mode shifter feedback). **Repair Action**: Check lid lock operation using Service Mode Test 11 - Spin Test. Check lid lock harness connectors both at the main board and at the lid lock assembly.

Fault Code: 2. **Fault Name**: Lid Monitor. **Fault Description**: Lid is opened, and motor power relay is not disabled within 500ms. **Repair Action**: Replace lid lock if this happens frequently.

Fault Code: 3. **Fault Name**: Locked Rotor Critical Fault. **Fault Description**: When driving with no speed feedback for 3 accumulated seconds. **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. Run Service Mode Test 11 - Spin Test to verify motor operation. 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 belt and pulley drive, replace main board.

Fault Code: 5. **Fault Name**: Mode Shift. **Fault Description**: If the mode shifter fails to complete a shift, it will retry two more times. If it still doesn't complete a shift, it will set this fault. **Repair Action**: Use Service Mode Test 11 - Spin Test 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**: The critical flood level by pressure algorithm is tripped as defined here: Flood Protection Algorithm. **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 Service Mode Test 8 - Pressure Sensor Test 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: 8. **Fault Name**: Pressure Sensor Loss. **Fault Description**: The pressure sensor loss algorithm set conditions are described here: Flood Protection Algorithm. **Repair Action**: Check to make sure house water supply valves are turned on. Check water valve operation. heck pressure tube for pinches where it goes through top cover grommet. Use Service Mode Test 8 - Pressure Sensor Test 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**: This fault is set if 3 consecutive cycles are started without seeing the lid open. **Repair Action**: Open and close the lid to clear the fault. Check harness and connectors that go to the lid switch. Consumer education that 4 cycles cannot be run back-to-back without opening and closing the lid. If the fault will not clear, replace the lid switch.

Fault Code: 10. **Fault Name**: Mode Shift Feedback Monitor. **Fault Description**: The following logic is used to set this fault: - If motor power relay is enabled - If Speed is > 45 shaft RPM - If mode shift feedback = SPIN - If software mode shift state = AGITATE for 5 consecutive seconds - Set Fault - If mode shift feedback = AGITATE - If software mode shift state = SPIN for 5 consecutive seconds - Set Fault. **Repair Action**: Check mode shifter coupler for damage and the ability to slide in and out freely. Use Service Mode Test 11 - Spin Test 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 5700 ohms). Check for 120VAC to the mode shifter motor at the control connector.

Fault Code: 15. **Fault Name**: Temp Sensor Invalid. **Fault Description**: When Temperature Sensor is not present or provides an invalid value, the fault is set. **Repair Action**: Check thermistor resistance from connector J703 on the control board. Validate the resistance matches the table on the wiring diagram. Check wiring harness and connections. Replace thermistor.

Fault Code: 18. **Fault Name**: Drain Pump Clearing. **Fault Description**: When adaptive drain cycle step timeout occurs, drain pump clearing algorithm begins. After drain pump clearing algorithm finishes. The fault is set if tub is not empty. This is actually an “event” rather than a traditional “fault”. We merely increment a counter that indicates how many times this issue has occurred. **Repair Action**: Fill tub using Service Mode Test 7 and check drain pump operation using Service Mode Test 9 - Drain Pump Test. 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 J401 pins 2 and 4. Check pressure tube for pinches where it goes through top cover grommet. Run Service Mode Test 8 - Pressure Sensor Test 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**: UI state = IDLE and water present (pressure > 0.520”) for 24 hours. OR UI state is in any state except IDLE, RUN, or DELAY RUN for 24 hours. **Repair Action**: Check for leaking water valves. Use Service Mode Test 8 - Pressure Sensor Test 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. 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**: Tub volume level exceeds the critical flood gallons limit defined here: Flood Protection Algorithm. **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. Run Service Mode Test 8 - Pressure Sensor Test to ensure correct pressure sensor operation.

Fault Code: 23. **Fault Name**: Critical Lid Lock Failure: Can’t Lock. **Fault Description**: This fault is set when the software has tried multiple times to Lock the lid without success. Here are the specifics: Try to lock 4 times with a 1.5 second delay between each try. After first 4 tries, delay for 30 seconds (cool down). Try to lock 4 more times with a 1.5 second delay between each try. If still not successful, set fault. **Repair**

Action: Run Service Mode Test 11 - Spin Test to ensure lid lock operation. Verify that the lid lock is not blocked by any external debris. Check lid switch continuity at J404 pins 1 and 3 on the control. Check lid lock wiring harness from the control to lock assembly.

Fault Code: 24. **Fault Name**: Lid Logic Failure. **Fault Description**: 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 Test 11 - Spin Test to ensure lid lock operation. Pull up on the lid during spin for more than 5 seconds and see if this fault occurs. Check harness and connections from the control to the lid lock assembly for damage and continuity

Fault Code: 25. **Fault Name**: Pressure Sensor Dropout. **Fault Description**: If the pressure is above 6” and then later drops to less than 1” for 5 consecutive seconds without draining, set the fault. **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 Service Mode Test 8 - Pressure Sensor Test 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) Redistribution. **Fault Description**: This fault is set if final spin terminates early due to too many redistribution requests. **Repair Action**: Run SPEED WASH cycle and wait for final spin to verify that the basket reaches final spin speed and the display does not scroll Unbalanced. Check to make sure unit is firmly seated on all four legs, doesn’t rock, and is leveled. Check that the hub nut is tight. If the hub nut is loose, replace the hub nut.

Fault Code: 27. **Fault Name**: Water Accessibility. **Fault Description**: f the lid has been open continuously for 15 minutes without valves being on and the tub is not empty. NOTE: If filling with the lid open, the 15 minute time will begin after the water valves turn off. If the lid is opened/closed/opened during the 15 minutes, the 15 minute counter will reset. **Repair Action**: Check for leaking water valves. Use Service Mode Test 8 - Pressure Sensor Test to ensure correct pressure sensor operation. Consumer education on leaving lid open for more than 15 minutes during a cycle. Consumer education on leaving sopping wet items in basket for more than 15 minutes.

Fault Code: 29. **Fault Name**: Suds Lock Abatement Failure. **Fault Description**: Suds lock abatement is requested again after already being requested during the final spin profile (the cycle is terminated). The intent of this is to determine of the suds lock abatement algorithm is unsuccessful. **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**: Any key press lasts for more than 60 seconds. NOTE: This will never be set on 100% cap touch UI systems - only applies to tactile keys. **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**: The spin profile goes into fallback due to OOB conditions during final spin. **Repair Action**: Run SPEED WASH cycle

and wait for final spin to verify that the basket reaches final spin speed and the display does not scroll Unbalanced. Check to make sure unit is firmly seated on all four legs, doesn't rock, and is leveled. Check that the hub nut is tight. If the hub nut is loose, replace the hub nut. Check that the rod and spring are dampening properly. 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. **Fault Description**: This fault is set when the software has tried multiple times to unlock the lid without success. Here are the specifics: Try to unlock 4 times with a 1.5 second delay between each try. After first 4 tries, delay for 30 seconds (cool down). Try to unlock 4 more times with a 1.5 second delay between each try. If still not successful, set fault. **Repair Action**: Run Service Mode Test 11 - Spin Test to ensure lid lock operation. Verify that the lid lock is not blocked by any external debris. Check lid switch continuity at J404 pins 1 and 3 on the control. Check lid lock wiring harness from the control to lock assembly.

Fault Code: 33 or 34 or 47 or 48. **Fault Name**: MC Board Faults. **Fault Description**: Any of these faults can be set if the inverter board reports a fault. **Repair Action**: Run Service Mode Test 11 - Spin Test to full completion. If cycle fully completes, no further action required. Check line voltage for 102VAC-132VAC. Check motor TCO. If open, should reset after 45 minutes. Check the motor windings resistances match the Component Resistance Table. If any winding is found open or the resistance does not match the Component Resistance Table, replace the motor. If the above repair actions don't clear the fault.

Fault Code: 58. **Fault Name**: ADC Health Check Fault. **Fault Description**: This fault is set when any ADC Self-Diagnosis channel reports an out-of-tolerance value for 10 seconds. **Repair Action**: Replace main board.

Fault Code: 65. **Fault Name**: Pressure Sensor Continuous Gallons Monitor. **Fault Description**: The pressure sensor loss algorithm set conditions are described here: Flood Protection Algorithm. **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 Service Mode Test 8 - Pressure Sensor Test 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: 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 SmartHQ diagnostic tool or use a SUM module to update the software.

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

Fault Code: 92. **Fault Name**: MC Board Heartbeat Failure. **Fault Description**: No heartbeat from the inverter to the MC detected for 60 seconds. **Repair Action**: Run Service Mode Test 11 - Spin Test. If cycle completes, no repair needed and clear faults. Check line voltage for 102VAC-132VAC. Check the motor windings resistances match the Component Resistance Table. If any winding is found open or the resistance is does not match the Component Resistance Table, replace the motor.

Fault Code: 95. **Fault Name**: Eeprom Communication Fault. **Fault Description**: Eeprom is unable to be written/read/erased. **Repair Action**: Replace main board.

Fault Code: 97. **Fault Name**: Pressure Sensor Failure. **Fault Description**: **Repair Action**: Replace main board.

Fault Code: 98. **Fault Name**: Large OOB at High Speed. **Fault Description**: Cycle canceled due to large OOB detected at high spin speed. **Repair Action**: Run SPEED WASH cycle and wait for final spin to verify that the basket reaches final spin speed and the display does not scroll UnbALAnCEd. Verify unit is firmly seated on all four legs, doesn't rock, and is leveled. Inspect leveling legs and bottom apron corner supports for damage. Check that the hub nut is tight. If the hub nut is loose, replace the hub nut. 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. Confirm balance ring has fluid by quickly jostling the basket clockwise and counter-clockwise and listening for fluid movement in the balance ring. Replace basket if no fluid is present. Check for damage to the balance ring, tub, tub cover, basket, rod and spring assembly, top apron corner brackets, top cover, lid, and lid lock. Replace components if damage impacting function is observed.

Fault Code: 99. **Fault Name**: WiFi Communication Fault. **Fault Description**: WiFi module not responding. **Repair Action**: Check WiFi harness connections. If the above actions don't clear the fault, replace WiFi board, WiFi harness, and WiFi label on lid. If the above actions don't clear the fault, replace main board.