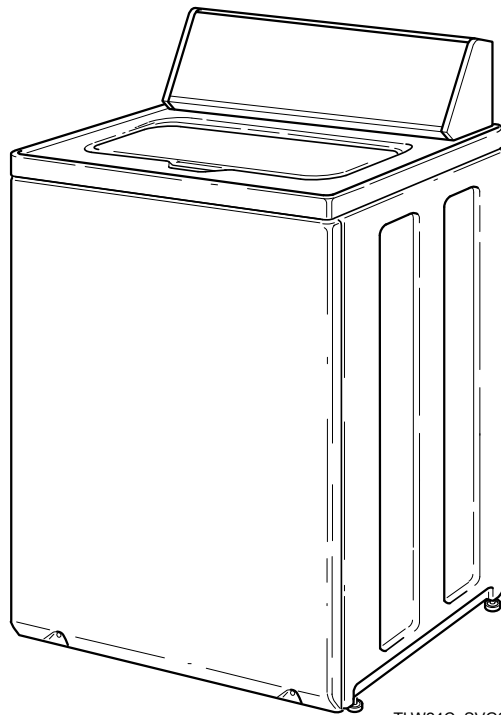


Home Topload Washers

Refer to Page 7 for Model Numbers

Troubleshooting



TLW24C_SVG2

Original Instructions

Keep These Instructions for Future Reference.

CAUTION: Read the instructions before using the machine.

(If this machine changes ownership, this manual must accompany machine.)




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Safety Information

Precautionary statements (“DANGER,” “WARNING,” and “CAUTION”), followed by specific instructions, are found in this manual and on machine decals. These precautions are intended for the personal safety of the operator, user, servicer, and those maintaining the machine.




	DANGER
Indicates an imminently hazardous situation that, if not avoided, will cause severe personal injury or death.	
	WARNING
Indicates a hazardous situation that, if not avoided, could cause severe personal injury or death.	
	CAUTION
Indicates a hazardous situation that, if not avoided, may cause minor or moderate personal injury or property damage.	


Additional precautionary statements (“IMPORTANT” and “NOTE”) are followed by specific instructions.

IMPORTANT: The word “IMPORTANT” is used to inform the reader of specific procedures where minor machine damage will occur if the procedure is not followed.

NOTE: The word “NOTE” is used to communicate installation, operation, maintenance or servicing information that is important but not hazard related.

In the interest of safety, some general precautions relating to the operation of this machine follow.

	WARNING
<ul style="list-style-type: none"> • Failure to install, maintain and/or operate this product according to the manufacturer’s instructions may result in conditions which can produce serious injury, death and/or property damage. • Do not repair or replace any part of the product or attempt any servicing unless specifically recommended or published in this Service Manual and unless you understand and have the skills to carry out the servicing. • Whenever ground wires are removed during servicing, these ground wires must be reconnected to ensure that the product is properly grounded and to reduce the risk of fire, electric shock, serious injury or death. 	
W006R2	
	WARNING
<p>To reduce the risk of electric shock, fire, explosion, serious injury or death:</p> <ul style="list-style-type: none"> • Disconnect electric power to the washer before servicing. • Never start the washer with any guards/panels removed. • Whenever ground wires are removed during servicing, these ground wires must be reconnected to ensure that the washer is properly grounded. 	
W003	
	WARNING
Repairs that are made to your products by unqualified persons can result in hazards due to improper assembly or adjustments subjecting you, or the inexperienced person making such repairs, to the risk of serious injury, electrical shock, or death.	
W007	

	CAUTION
<p>If you or an unqualified person perform service on your product, you must assume the responsibility for any personal injury or property damage which may result. The manufacturer will not be responsible for any injury or property damage arising from improper service and/or service procedures.</p>	
<p>W008</p>	

NOTE: The WARNINGS and IMPORTANT INSTRUCTIONS appearing in this manual are not meant to cover all possible conditions and situations that may occur. Common sense, caution and care must be exercised when installing, maintaining or operating the machine.

Always contact your dealer, distributor, service agent or the manufacturer about any problems or conditions you do not understand.

Locating an Authorized Service Person

Alliance Laundry Systems is not responsible for personal injury or property damage resulting from improper service. Review all service information before beginning repairs.

Warranty service must be performed by an authorized technician, using authorized factory parts. If service is required after the warranty expires, Alliance Laundry Systems also recommends contacting an authorized technician and using authorized factory parts.

Introduction

Model Identification

Information in this manual is applicable to these washer models:

AWN43RSN115CW01	AWN63RSN115CW14
AWN43RSN115CW14	AWN63RSN115TW01
AWN43RSN115TW01	AWN63RSN115TW0P
AWN43RSN116TW01	AWN63RSN116TW01
AWN43RSN305LW01	ZWN43RSN115CW01
AWN43RSN305NW29	ZWN43RSN116CW01
AWN43RSN305XW01	ZWN63RSN115CW01
AWN63RSN115CW01	ZWN63RSN116CW01

How Your Washer Works

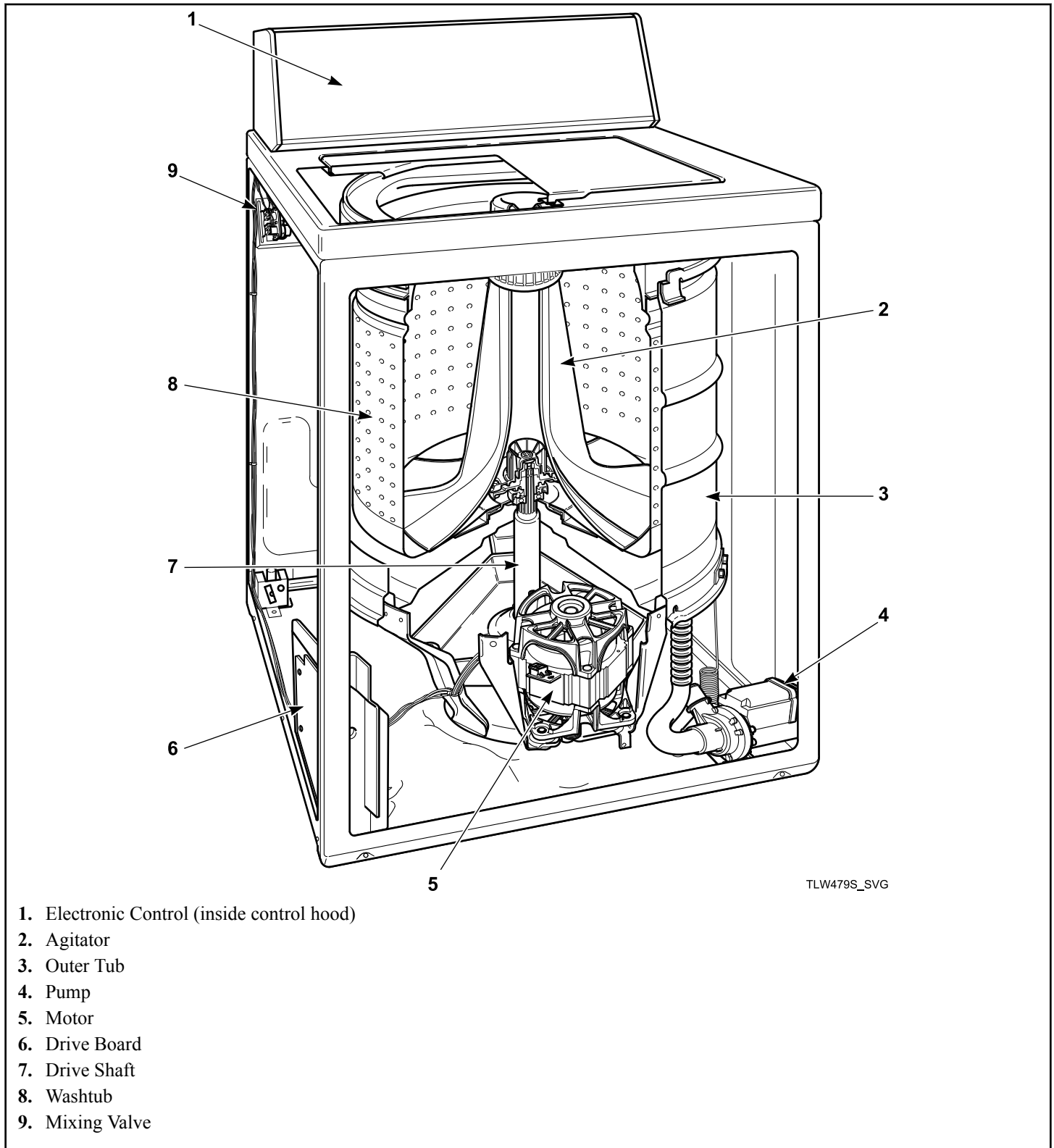


Figure 1

The cycle begins with a wash fill. The water temperature is determined by the temperature selected on the control. While water

fills the washtub, a column of air is trapped in a pressure bulb and hose. The air pressure continues to increase as the washtub fills

with water until the air pressure hose reaches a level determined by the selected water level (load size switch setting) and the selected cycle. The water will stop filling at the minimum level for the selected cycle when Auto Fill is selected. In either case, the washer will begin load sensing to determine if more water is required for the actual load in the washer and the cycle selected. The wash agitation segment of the cycle begins at this time and the lid must be closed and locked for any further washer operation. On non-Eco cycles, after approximately two minutes of wash, the washer repeats the load sensing process to confirm that the water level is still correct for the load and cycle selected.

The washer uses a reversing type of inverter drive motor and a special stretch drive belt.

During agitation, the motor alternates between the clockwise and counterclockwise direction. The rapid reversal from one direction to the other creates the wash action. The stretch belt needs no adjustment for belt tension. Proper belt tension is provided by the pulley spacing and use of the proper size stretch belt. This eliminates belt slippage and ensures an efficient wash action.

After the wash agitation is complete and a short pause occurs, the control advances into the wash spin. During spin, the washtub will first rotate at 20 RPM while the electric pump runs to drain the water from the tub. Once the pressure sensor recognizes that the tub has been drained, the RPM will increase to extract water from the load and the pump will continue running to remove the water.

Water is introduced during the wash spin to spray the garments and remove suds from them. The wash spin is followed by a rinse step to rinse away any detergent residue.

During the rinse step in the Normal Eco cycle there will be two more spray rinses. Water is sprayed into the washtub while it is spinning. In all other cycles, the washer fills and then agitates like the wash portion of the cycle.

Following the rinse step a final spin extracts the rinse water from the clothes preparing them for the dryer. This will also start at 20 RPM with the pump running. After draining the spin will then increase to a higher speed that varies depending on what cycle has been selected. After the machine has been in spin long enough to ensure that most of the water has been removed from the load, the pump will run intermittently for the rest of the spin in order to improve drain performance and reduce noise.

Refer to Cycle Sequence Charts section for a detailed breakdown of each cycle.

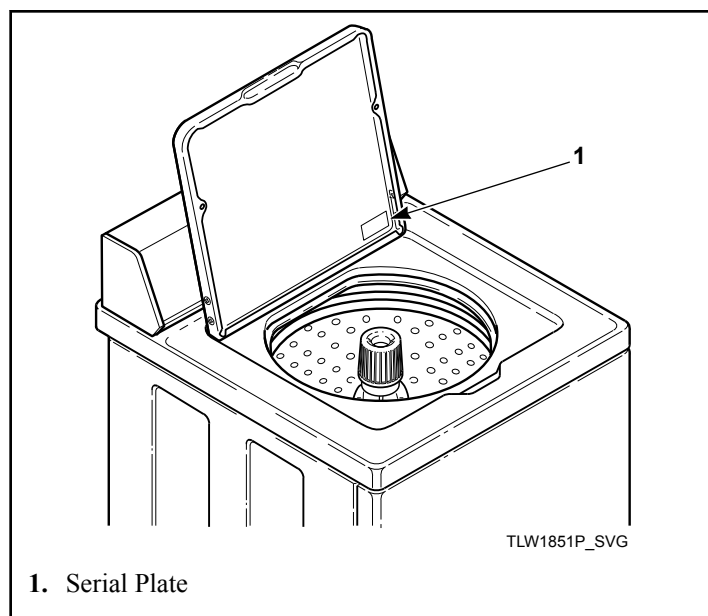
Customer Service

If literature or replacement parts are required, contact the source from whom the machine was purchased or contact Alliance Laundry Systems at (920) 748-3950 for the name and address of the nearest authorized parts distributor.

For technical assistance, call (920) 748-3121.

Serial Plate Location

When calling or writing about your product, be sure to mention model and serial numbers. Model and serial numbers are located on Serial Plate as shown.



1. Serial Plate

Figure 2

Troubleshooting Diagnostics

Factory Test Procedure

It is helpful to run the Factory Test Procedure first to diagnose the machine's issue. This procedure tests all machine features and operations.

To Enter Factory Test Procedure

1. Disconnect electrical power from unit.
2. Reconnect electrical power to unit.
3. Wait about 10 seconds.
4. Turn Cycle Selection knob to opposite of Normal Eco. Stay on that selection for at least one second.
5. Press and hold the Start/Pause button.

6. Change Cycle Selection knob to Normal Eco within 5 seconds or Start press will be invalid.
7. Stay on Normal Eco for at least one second. Control will enter Factory Test Mode.
8. To advance through the sequence of test steps press the Start/Pause button. Refer to *Table 1* for all tests in the Factory Test Procedure.

To Exit Factory Test Procedure

To exit the Factory Test Procedure, refer to Exit column in *Table 1* and Exit Key in *Table 2*.

Factory Test Procedure Quick Reference Chart							
Number	Display (LEDs lit)	Motor	Valves	Lid	Pump	Exit	Step
0	All LEDs lit	Off	None	Unlocked	Off	1	Show Mode
1	Refer to <i>Cycle Switch Test</i>	Off	None	Unlocked	Off	3 and then 1	Cycle Switch
2	Refer to <i>Temperature Switch Test</i>	Off	None	Unlocked	Off	3 and then 1	Temperature Switch
3	Refer to <i>Load Size Switch Test</i>	Off	None	Unlocked	Off	3 and then 1	Load Size Switch
4	Refer to <i>Extra Rinse Test</i>	Off	None	Unlocked	Off	3 and then 1	Extra Rinse
5	Refer to <i>Lid Switch Test</i>	Off	None	Unlocked	Off	10 and then 1	Lid Switch
6	Wash	Off	Hot	Unlocked	Off	1	Hot Fill
7	Rinse	Off	Cold	Unlocked	Off	1	Cold Fill
8	Wash, Rinse	Off	Hot, Cold	Unlocked	Off	2 and then 1	Pressure Sensor Fill
9	Lid Lock	Off	None	Locked	Off	7 and then 1	Lid Lock Check

Table 1 continues...

Factory Test Procedure Quick Reference Chart							
Number	Display (LEDs lit)	Motor	Valves	Lid	Pump	Exit	Step
10 In Software Version 3 and higher this is skipped.	Wash, Spin	Delicate Long Stroke Agitate	Cycle Output	Locked	Off	1	Long Stroke Agitate
11 In Software Version 3 and higher this is skipped.	Rinse, Spin	Delicate Short Stroke Regular Agitate	None	Locked	Off	1	Short Stroke Agitate
12	Refer to <i>Factory Spin Test</i>	Factory Spin Profile	None	Locked	On	1	Factory Spin
13	Wash, Rinse always on Spin, Lid Lock when unbalance switch pressed	Off	None	Unlocked	Off	14 and then 1	Unbalance Switch Test
14	Rinse, Spin and Lid Lock when lid locked	Off	Hot, Cold, Cycle output	Unlocked	On	1 and then 4	Breakaway
15	None	Off	None	Unlocked	Off	13	Power Down

Table 1

Exit Column Key	
1	Exit by pressing Start/Pause button
2	Exit by fill level satisfaction
3	Exit when all selections are pressed
4	Exit when lid is unlocked
5	Exit when temperature reaches 104°F [40°C]
6	Exit when step timed out
7	Exit when lid locks
8	Exit when overflow level is reached

Table 2 continues...

Exit Column Key	
9	Exit when washtub is empty
10	Exit when lid is closed
11	Exit when lid is opened
12	Exit when drive communication is established
13	Exit when machine unpowered

Table 2

Cycle Switch Test

This step verifies that the Cycle Selection Switch is correctly wired and working. Turn the Cycle Selection knob through all selections.

A combination of LEDs will light to show which inputs are on for each selection. Refer to table below.

Press Start/Pause button to advance to the next step.

6-Cycle Washers			
Cycle	Wash LED	Rinse LED	Spin LED
Heavy Duty		On	
Normal Eco		On	On
Perm Press			On
Delicate	On	On	
Handwash	On		On
Spin Only	On		

Table 3

4-Cycle Washers			
Cycle	Wash LED	Rinse LED	Spin LED
Heavy Duty	On	On	On
Normal Eco		On	On
Perm Press	On		On
Delicate	On	On	

Table 4

Temperature Switch Test

This step verifies that the Wash Temperature Switch is correctly wired and working. Turn the Wash Temperature knob through all selections.

A combination of LEDs will light to show which inputs are on for each selection. Refer to table below.

Press Start/Pause button to advance to the next step.

6-Cycle Washers			
Cycle	Wash LED	Rinse LED	Spin LED
Hot	On		On
Warm			
Cool			On
Cold		On	On

Table 5

4-Cycle Washers			
Cycle	Wash LED	Rinse LED	Spin LED
Hot	On		On
Warm			On
Cold		On	On

Table 6

Load Size Switch Test

This step verifies that the Load Size Switch is correctly wired and working. Turn the Load Size knob through all selections.

A combination of LEDs will light to show which inputs are on for each selection. Refer to table below.

Press Start/Pause button to advance to the next step.

Cycle	Wash LED	Rinse LED	Spin LED
Auto Fill		On	On
Large			On
Medium			
Small	On		On

Table 7

Extra Rinse Test

This step verifies that the Extra Rinse Switch is correctly wired and working. Turn the Extra Rinse button to On and then Off. When the Switch is On, the SPIN LED (and EXTRA RINSE LED, if applicable) will be lit.

Press Start/Pause button with Extra Rinse off to exit the step.

Lid Switch Test

This step verifies that the Lid Switch is correctly wired and working. Close the lid. When the lid switch is closed, the SPIN and LID LOCK LEDs will be lit.

Close the lid and press Start/Pause button to exit the step.

Hot Fill Test

This step checks the hot water valve. The WASH LED is on during this test. The valves will shut off once two inches of water has been reached.

Press Start/Pause button to advance to the next step.

Cold Fill Test

This step checks the cold water valve. The RINSE LED is on during this test. The valves will shut off once three inches of water has been reached.

Press Start/Pause button to advance to the next step.

Pressure Sensor Fill Test

This step checks the water level input. All water valves will be on until the low water fill level is satisfied (four inches). The WASH and RINSE LEDs will be lit in this step.

Press Start/Pause button once the water level is satisfied to exit the step.

Lid Lock Test

This step checks the Lid Lock input. When the step is entered, the control will lock the lid. It will check to make sure the lid is locked and if it is, the LID LOCK LED will be on, otherwise the LID LOCK LED will flash.

Once locked, press Start/Pause button to exit the step.

Long Stroke Agitate Test

In Software Version 3 and higher this is skipped.

Not available on models through Serial Nos. beginning 1810.

This step checks the Low Agitate speed. The WASH and SPIN LEDs are On, the Cycle Run Output is on, and the machine enters a Delicate Cycle Long agitate.

The control will remain in this step until the Start/Pause button is pressed.

Short Stroke Agitate Test

In Software Version 3 and higher this is skipped.

Not available on models through Serial Nos. beginning 1810.

This step checks the Regular Agitate speed. The RINSE and SPIN LEDs are on and the machine enters a Delicate Cycle Short agitate.

The control will remain in this step until the Start/Pause button is pressed.

Factory Spin Test

This step checks the spin speeds. The machine steps through spin speeds and maintains each speed for a few seconds. After 820 RPM, the motor will stop. All OBL checking is done and if either the out of balance switch is hit or the OBL check fails at 300 RPM, the time will be reset indefinitely to allow the load to be rebalanced so that it can spin up and reach full speed.

The control will advance to the next step if the Start/Pause button is pressed at any time during this step.

During this step, if 300 RPM is reached, the WASH LED will be lit. If 500 RPM is reached, the RINSE LED will be lit. If 820 RPM is reached, the SPIN LED will be lit and if 800 RPM is reached, the LID LOCK LED will be lit to indicate that a passing speed has been reached.

All water valves will be on during this entire test to blow them out.

Unbalance Switch Test

This step checks that the unbalance switch is working. The WASH and RINSE LEDs will be on during the entire test. When the switch is pressed, the SPIN and LID LOCK LEDs will be on.

The switch must be pressed and then Start/Pause button can be pressed to advance to the next step.

Breakaway Test

This step checks the lid unlock function. All valves will be open at the beginning of this step to allow the blowing out of the valves, if needed. The Start/Pause button must be pressed to start exiting the test. The first Start/Pause press will turn off the water valves and start the unlock process. Once the lid unlocks, the machine will exit the test.

The RINSE and SPIN LEDs will be lit during this test. The LID LOCK LED will be lit when the lid is locked in this test.

Power Down Test

This is the final step of the factory test procedure. All LEDs will be off to signify that the factory test procedure has been completed and that the user can safely unplug the machine. Cycling power to the machine is the only way to resume normal operation.

Advance to Drain and Spin

Models starting Serial Nos. beginning 1804 can be rapid advanced to the final spin/drain step. For example, when testing a washer you could enter this mode after the machine fills to advance to the final spin to drain out the water.

How to Advance:

1. Make sure EXTRA RINSE is in the OFF position.

2. Press and hold the START/PAUSE button. After about three seconds the current cycle status light will turn off.
3. Continue holding the START/PAUSE button for another 7 - 8 seconds until the SPIN light comes on then release the button.
4. If the lid was unlocked, the LID LOCK light will come on and the lid will lock. Once locked, the machine will start to drain and spin.
5. After the final spin/drain step the control will reset to normal operation.

Feature Configuration - Through Serial Nos. Beginning 1810

Dipswitch Configuration

Dipswitches exist only on models through Serial Nos. beginning 1810.

	OFF	ON
Switch 1	120 Volt AC Supply	240 Volt AC Supply
Switch 2	Spray Rinse Enable	Spray Rinse Disabled
Switch 3	Regulated Water Temperature/Fill Levels	Unregulated Water Temperature/Fill Levels
Switch 4	Leak and Slow Drain Errors Off	Leak and Slow Drain Errors On
Switch 5	Pausing Allowed, Rapid Advance Disabled	Rapid Advance Enabled
Switch 6	Spin Retry Extra Time Enabled	Spin Retry Extra Time Disabled
Switch 7	Suds Routine Extra Time Enabled	Suds Routine Extra Time Disabled
Switch 8	Unused	Unused

Table 8

Switch 2: When set to OFF, spray rinse is enabled and the Eco Cycles use a spray rinse. When set to ON, spray rinse is disabled and deep tub fills are used for rinse steps.

Switch 3: When set to ON, water temperature and fill levels are used for the specific type/region of the machine. When set to OFF the U.S.A. default water temperatures and fill levels are used if the temperature and fill levels in use are not already greater.

Switch 5: When Pausing Allowed, Rapid Advance Disabled (Off) is selected, pressing the Start/Pause button during Run Mode will pause the cycle. When Rapid Advance Enabled (On) is selected,

pressing the Start/Pause button during Run Mode will advance the current cycle step to the next enabled step.

Switch 6: When set to Spin Retry Extra Time Enabled (Off) the cycle step time will pause for the amount of time used up to that point in the current step. This can happen twice per spin step during a cycle if the unbalance switch is hit or if an OBL check (at 90 RPM or 350 RPM) needs to restart the spin to rebalance the load. Additional OBL failures in the same cycle step will not pause the time but will still restart the spin. When set to Spin Retry Extra Time Disabled (On), time will not pause for respins.

Switch 7: When set to Suds Routine Extra Time Enabled (Off) the cycle step time will pause when Suds Removal Routines are being run. Up to two Suds Removal Routines are allowed per cycle. When set to Suds Routine Extra Time Disabled (On), time will not pause if a Suds Removal Routine is run and will only allow one Suds Removal Routine to be run per cycle.

Feature Configuration - Starting Serial Nos. beginning 1810

Audio Signals

An audio signal will sound for three seconds at the end of each cycle. To turn it off, hold the Extra Rinse button for three seconds. Hold it again for three seconds to turn the signal back on. A one-second tone will sound to confirm that the End of Cycle signal is turned off or on.

Audio signals will sound when a knob selection is changed and when the Start/Pause or Extra Rinse buttons are pressed. To turn them off, hold the Extra Rinse button for 10 seconds. Hold it again for 10 seconds to turn the signals back on. A three-second tone will sound to confirm that these signals are turned off or on.

In addition, the Status lights will be lit in an upward pattern when the signal is turned on. The lights will be lit in a downward pattern when the signal is turned off.

Rapid Advance

When Rapid Advance is enabled, pressing the START/PAUSE button during Run Mode will advance the current cycle step to the next enabled step.

How to Enter Rapid Advance Mode:

1. Press and hold both the START/PAUSE and EXTRA RINSE button for three seconds. The Status lights will be lit in an upward pattern when rapid advance is turned on.
2. Press START/PAUSE button to advance through the cycle.
3. To exit rapid advance, press and hold both the START/PAUSE and EXTRA RINSE button for three seconds. The lights will be lit in a downward pattern when the signal is turned off.

Mixing Valve Solenoid Test

Test mixing valve solenoids using an Ohm meter.

NOTE: Resistance readings slightly out of given ranges may be due to meter conditions. These readings DO NOT necessarily indicate mixing valve failure.

120 Volt valves	900 - 1100 Ohms
240 Volt valves	3200 - 4000 Ohms

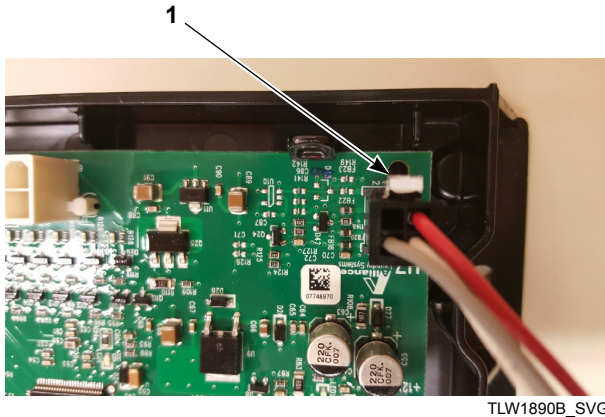
Table 9

WASH and RINSE LEDs Flash After Installing New Control

This applies to models through Serial Nos. beginning 1810.

If after changing the upper control board behind the control panel, the new control is sending an error code (WASH and RINSE LEDs flash once) during the first fill, it could indicate that the pressure sensor harness has been installed incorrectly. Refer to *Figure 3* and *Figure 4* . Follow the steps below to correct the error.

Incorrect

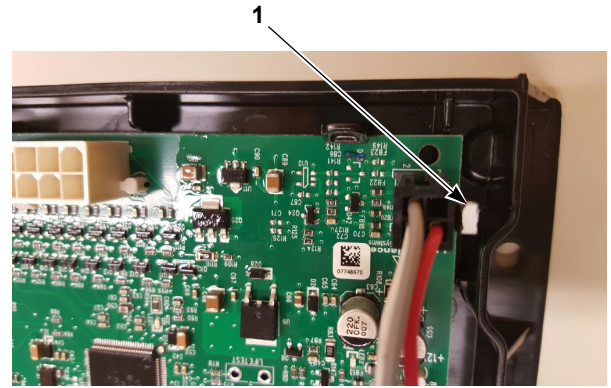


TLW1890B_SVG

1. Lock tab is at 12 o'clock position. (Note: Tab is colored white for illustration purposes)

Figure 3

Correct



TLW1891B_SVG

1. Lock tab is at 3 o'clock position. (Note: Tab is colored white for illustration purposes)

Figure 4

1. Disconnect electrical power from unit.
2. Remove screws holding hood assembly to rear hood panel.
3. Tip control panel down to locate H7 connection block (4-pin block with three wires: white, red and gray).
4. Press connection block release arm and remove block.
5. Relocate connection block so release arm is at three o'clock position and matches lock tab of block on control.
6. Re-install control hood.
7. Reconnect electrical power to unit.
8. Run washer through a cycle to verify proper operation.

Error Codes

Status lights may flash or remain on continuously to indicate an error condition. The number of flashes listed below is followed by a pause. Then the flash sequence will repeat.

Display	Description	Cause/Corrective Action
WASH, RINSE 1 time	Pressure Sensor Error	Check for broken wires or bad connection on Pressure Sensor Harness.
WASH, RINSE 2 times	Fill Error	Check for low water pressure, clog in line or plugged fill hose filter screens.
WASH, RINSE 2 times	No Water Flow Error	Pressure sensor hose is broken or disconnected. Check for no water lines connected, no water pressure, or clog in fill hose and filter screens.
WASH, RINSE 3 times	Suds Lock Error	Check for too much soap in machine (use less soap), clogged drain, stuck pump, item stuck outside of washtub and possibly between washtub and outer tub.
WASH, RINSE 4 times	Slow Drain Error	Draining took longer than expected. Check for clogs and for excessive amount of soap used.
WASH, RINSE continuous	Water Leak Error	Machine is leaking water due to leaking water valves, a hole in machine, or disconnected drain hose.
WASH, RINSE continuous	Overflow Error	Check for leaking water valves allowing water to come into machine. Check for debris in water valves. Check that water pressure is the same on both hot and cold lines and is within spec.
WASH, RINSE continuous	Drain Error	Check for clogged drain or clogged pump. Make sure drain hose is not too tall. If pump is overheating, frequency/voltage on machine/pump do not match.
RINSE, LID LOCK 2 times	Non Fatal Lid Locking Error	Check if lock is wet. Allow to dry. Check lid lock alignment. Check for broken wiring to lid lock or broken lid hook. Load/pressure on lid needs to adjusted.
RINSE, LID LOCK 2 times	Fatal Lid Lock Error	The control senses that the lid has unlocked during a running cycle. Check lock and wiring. If lock is wet, allow to dry. Unplug machine to clear this code.
RINSE, LID LOCK 3 times	Lid Open Error	Lid was sensed open during a running cycle. Check lid switch and wiring.
RINSE, LID LOCK 3 times	Non Fatal Lid Unlocking Error	Check if lock is wet. Allow to dry. Check lid lock alignment. Check for broken wiring to lid lock or broken lid hook. Load/pressure on lid needs to adjusted.
WASH, SPIN, LID LOCK 2 times	Broken Belt Error	Drive belt is sensed as broken or has fallen off. Replace belt. If belt is not broken, replace front end control.

Table 10 *continues...*

Display	Description	Cause/Corrective Action
WASH, SPIN 2 times	Non-Fatal Unbalance Error, maximum intended speed not reached in final spin	Machine has sensed load is unbalanced. Re-balance load and try spin step again. Do not adjust balance switch first. Most likely not due to unbalance switch mounting. If load is only one big item, add towels on opposite side to balance load. May also be due to excessive suds in load or too much water left in tub due to slow draining.
WASH, SPIN 2 times	Fatal Unbalance Error	Wires to unbalance switch are broken or not connected. Switch may be stuck closed. Broken spring or unlevel machine causing tub to lean on unbalance switch.
SPIN, LID LOCK continuous	Communication Error	Check H2 connector on FEC to drive board wire harness for broken wire or pin not making contact.
WASH, SPIN, LID LOCK 4 times	Board ID Error	Incorrect replacement control. Replace FEC or drive board with the correct part.
WASH, SPIN, LID LOCK 3 times	Board Shorted Error	Relay K1 on drive board is stuck/welded. Try tapping on relay to free contacts, otherwise replace drive board.
WASH, SPIN, LID LOCK 1 time	Drive Board Not Ready	Hardware failure. Replace drive board if error persists. Unplug machine to clear this code.
Red LED on control board on continuously instead of flashing	Dipswitch/Voltage Configuration Error	Unexpected supply voltage: Check the harness connections between the front end control and the drive board. If the front end control was replaced, set dip switch 1 to the same setting as the previous control. If reworking the machine to use a different voltage supply, dip switch 1 setting may need to be changed. If dip switch 1 setting is changed, power down, power up and try again. Also check pin H2-7 on the front end control to ensure good connection between front end control and drive board.
Drive Errors		
All LEDs 6 times	Voltage Select Error	Wrong input voltage seen at drive board. (120 Volt or 240 Volt) Dip switch 1 on front end control set wrong. There could possibly be water on drive board (let drive dry out and determine cause of water). Unpower to clear error. Replace drive board if error persists.
All LEDs 1 time	Over Voltage AC-Main Input Error	Machine voltage is too high. Check supply voltage to the machine and verify that it is within machine specifications. Unpower to clear error. Replace drive board if error persists.
All LEDs continuous	Power Fail Dangerous Error	The neutral line power input to the machine was seen out of range. Unpower to clear error. Check for damage in the power supply harness. Replace power supply harness or drive board if error persists.
All LEDs 5 times	Over Voltage DC Bus Error	Unpower to clear error. Check voltage input to machine. If it happens only at start of spin, replace motor. Replace drive board if error persists.

Table 10 continues...

Display	Description	Cause/Corrective Action
WASH, RINSE, SPIN 1 time	Over Motor Temperature Error	Motor temperature is detected to be too high. Check that wash-tub spins freely when empty. Check for overloading of machine. Check motor harness for damage. Reduce agitation time and duty cycle if rotate/pause times are very short and programmable. Unpower to clear error. Replace drive board if error persists.
All LEDs 4 times	Fatal IPM Over Current Shunt Error	Check that washtub and motor spins freely. Unpower to clear error. Check the motor phase windings. Continuity should be uniform between phases L1 and L2, L2 and L3, L1 and L3. Replace motor if not uniform. Replace drive board if error persists.
All LEDs 3 times	Fatal I2T Hardware Over Current Error	Check that washtub and motor spins freely. Rotor may be locked up. Check the motor phase windings. Continuity should be uniform between phases L1 and L2, L2 and L3, L1 and L3. Replace motor if not uniform. Unpower to clear error. Replace drive board if error persists.
WASH, RINSE, SPIN 2 times	IPM Over Temperature Error	IPM temperature is detected to be too high. Check that washtub spins freely when empty, check for overloading of machine, reduce agitation time and duty cycle if rotate/pause times are very short and programmable. Unpower to clear error. Check for lint build-up on heat sink on drive board. Replace drive board if error persists.
All LEDs 2 times	Motor Not Connected Error	The motor or one of its electrical phases is not connected. Check that the harness from the motor to the drive board is fully plugged in on both ends and that there is no damage to the motor harness. Make sure to push in the motor harness on both ends just in case it is a little loose and not fully inserted. If the harness looks fine and the error still occurs, try replacing the drive board or harness. Unpower to clear error.
WASH, RINSE, SPIN 3 times	Fatal Overload Current Detection	The drive stopped the motor because it is too hot. Let motor cool, check for anything that may be preventing free rotation of washtub and fix. If error persists, try replacing motor and/or drive board.
WASH, RINSE, SPIN 4 times	Back EMF Error	The phases of motor are decompensated. It is not possible to control the motor. The drive stopped the motor. Cycle power and try to run machine again. If error persists, try replacing motor and/or drive board.
WASH, RINSE, SPIN 5 times	Fatal Start-up Failure	After more than five occurrences the drive turns off all outputs and fatal error will be set. Cycle power and try to run machine again. If error persists, replace drive board.
WASH, RINSE, SPIN 6 times	Locked Rotor Failure	Locked rotor detected due to high motor current with low motor voltage. Check for anything that may be preventing free rotation of washtub and fix. If error persists, try replacing motor and/or drive board.
All LEDs continuous	Overcurrent Shunt Detection Circuit Fail Error	Hardware failure. Unpower to clear error. Replace drive board if error persists.

Table 10 *continues...*

Display	Description	Cause/Corrective Action
All LEDs continuous	Lid Lock Pin HW On/Off Fail Error	Hardware failure. Unpower to clear error. Replace drive board if error persists.
All LEDs continuous	Hot Valve Pin HW On/Off Fail	Hardware failure. Unpower to clear error. Replace drive board if error persists.
All LEDs continuous	Cold Valve Pin HW On/Off Fail	Hardware failure. Unpower to clear error. Replace drive board if error persists.
All LEDs continuous	Inrush Pin HW On/Off Fail	Hardware failure. Unpower to clear error. Replace drive board if error persists.
All LEDs continuous	Voltage Doubler Pin HW On/Off Fail	Hardware failure. Unpower to clear error. Replace drive board if error persists.
All LEDs continuous	Lid Lock Select Voltage Pin HW On/Off Fail	Hardware failure. Unpower to clear error. Replace drive board if error persists.
All LEDs continuous	Pump Pin HW On/Off Fail	Hardware failure. Unpower to clear error. Replace drive board if error persists.
All LEDs continuous	Recirculation Pin HW On/Off Fail Error	Hardware failure. Unpower to clear error. Replace drive board if error persists.
All LEDs continuous	Inverter Hardware Acquisition failure	The drive disabled motor activation. Cycle power and try to run machine again. If error persists, replace drive board.
All LEDs continuous	Voltage Bus acquisition failure	The drive disabled motor activation. Cycle power and try to run machine again. If error persists, replace drive board.
All LEDs continuous	Motor error initialization	If there is an error when the inverter is powered on the error will be detected. Cycle power and try to run machine again. If error persists, replace drive board.
All LEDs continuous	Unbalance Switch Error	Hardware failure. Check unbalance switch and wiring. Unpower to clear error. Replace drive board if error persists.

Table 10

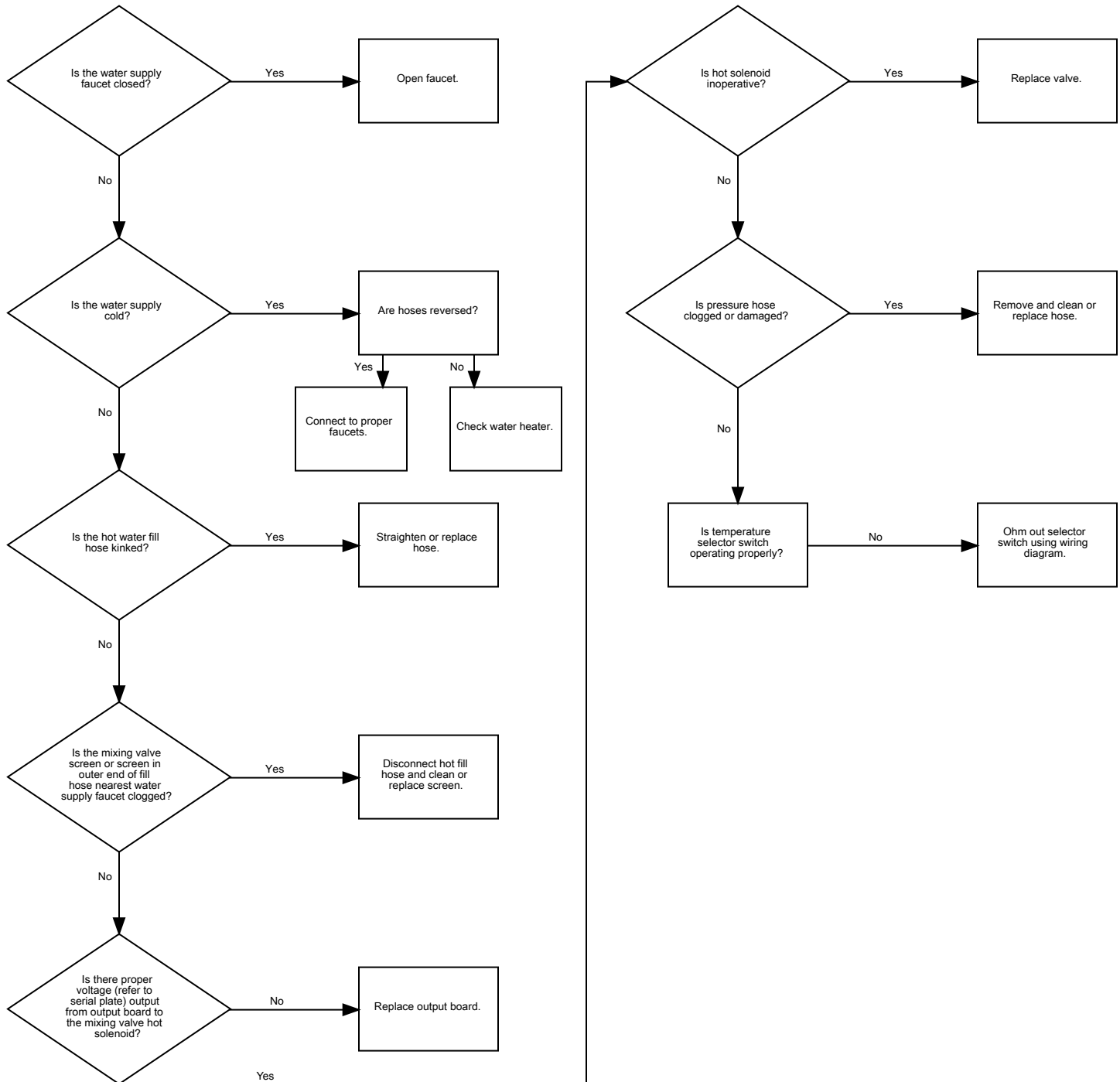
Troubleshooting Flowcharts

In some of the following procedures it will be necessary to check voltage using a multimeter. Refer to the washer's serial plate to determine proper voltage it is designed to operate on.

Refer to *Figure 2* for serial plate location.

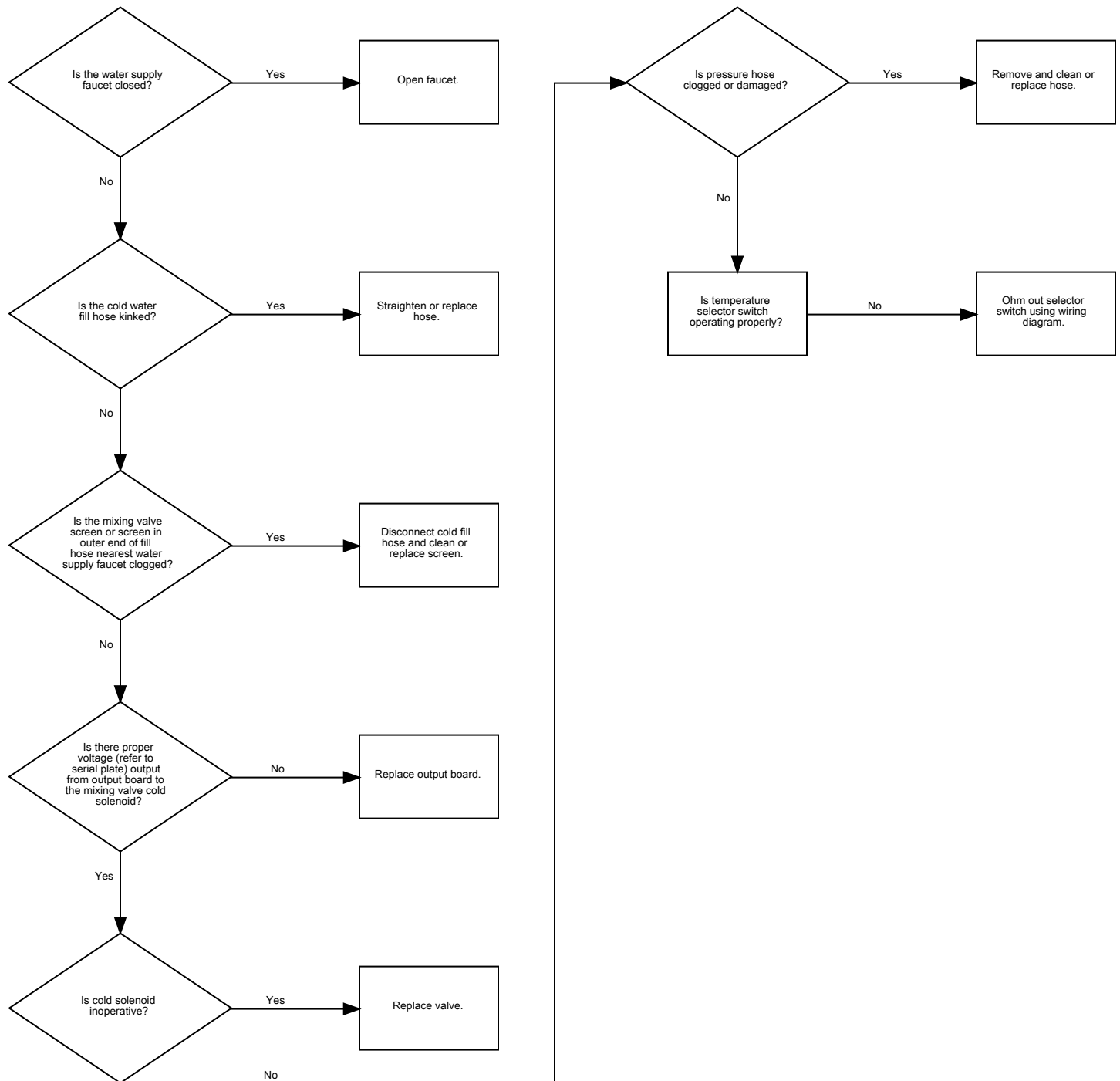
No Hot Water

WASH, RINSE STATUS lights flash 1 or 2 times



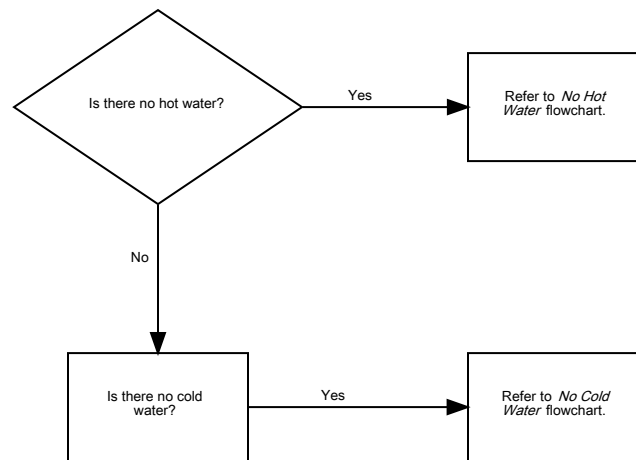
No Cold Water

WASH, RINSE STATUS lights flash 1 or 2 times



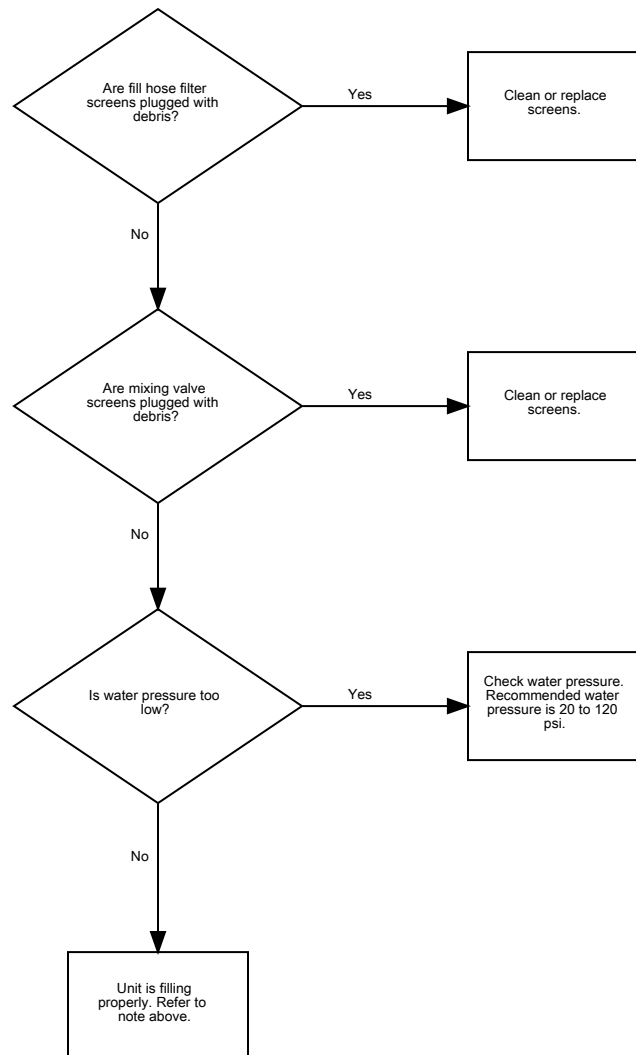
No Warm Water

WASH, RINSE STATUS lights flash 1 or 2 times



Slow Hot Fill or Warm Fill is Too Cold

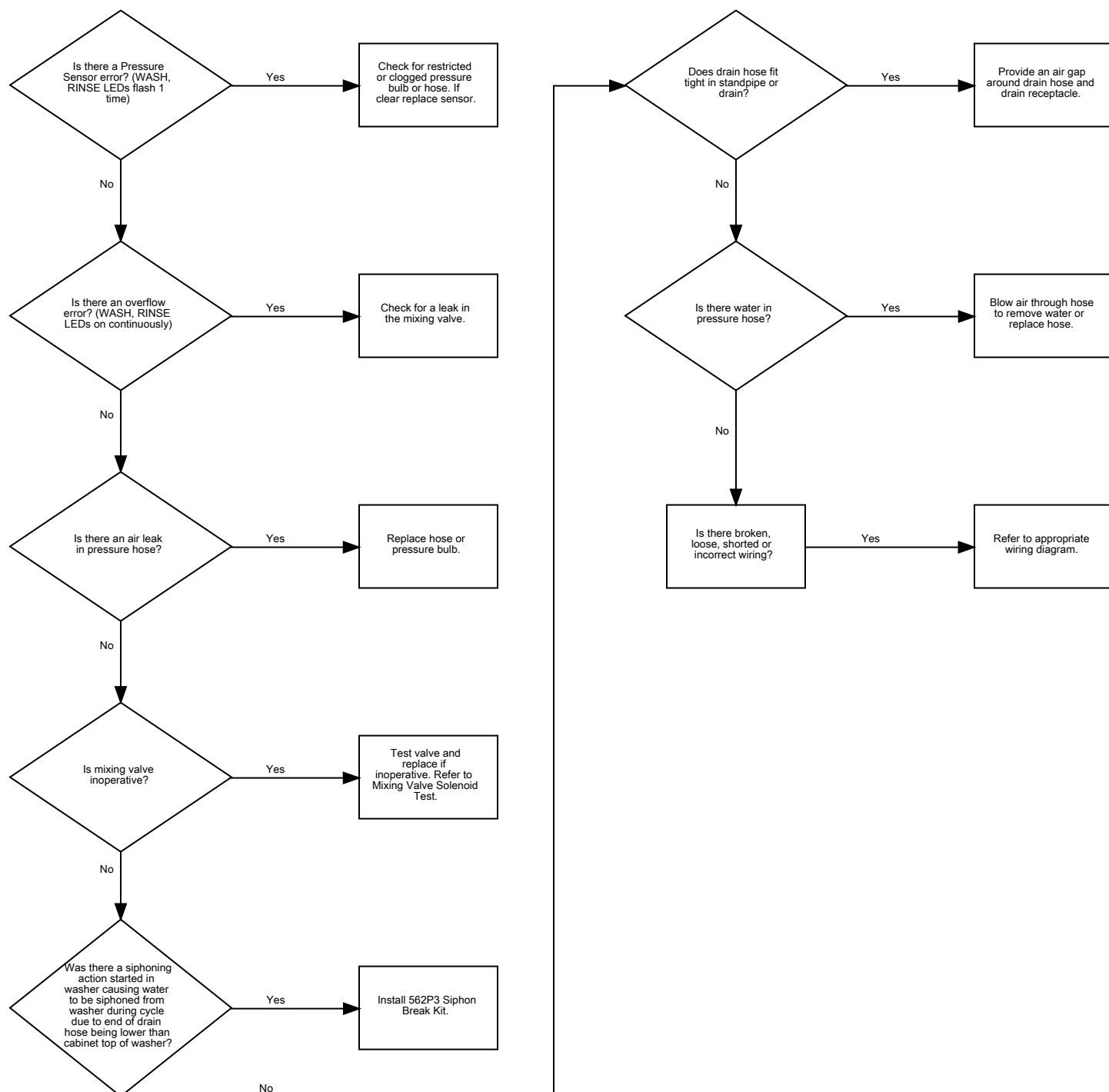
NOTE: Recent new mandates from the U.S. Department of Energy (DOE) call for certain efficiencies to be met by all washer manufacturers which require the use of a different fill valve to meet these requirements. No modification can be made to the washer to fill faster on these settings.



Water Fill Does Not Stop At Proper Level

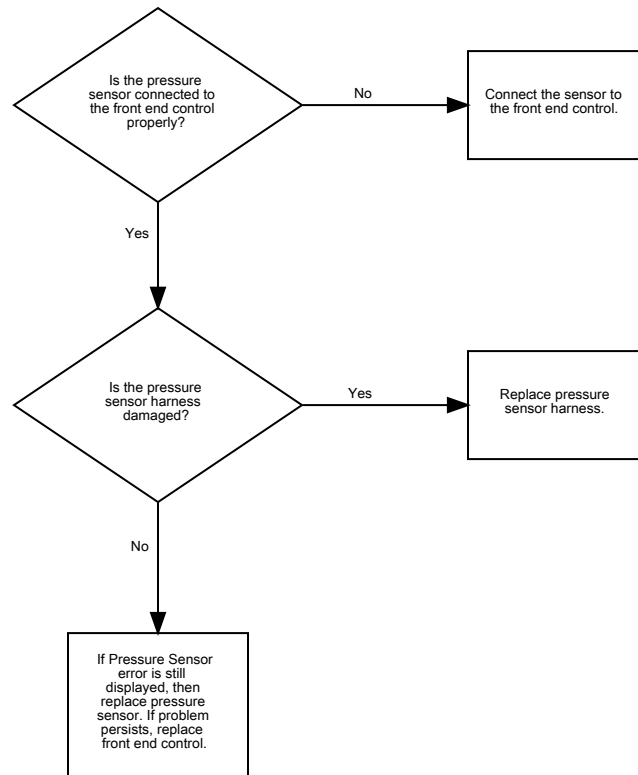
WASH, RINSE STATUS lights flash 1 or 2 times (Pressure Sensor or Fill Error), or remain on continuously (Overflow)

NOTE: The Auto Fill feature may add more water even when the Small, Medium or Large Load Sizes are selected.



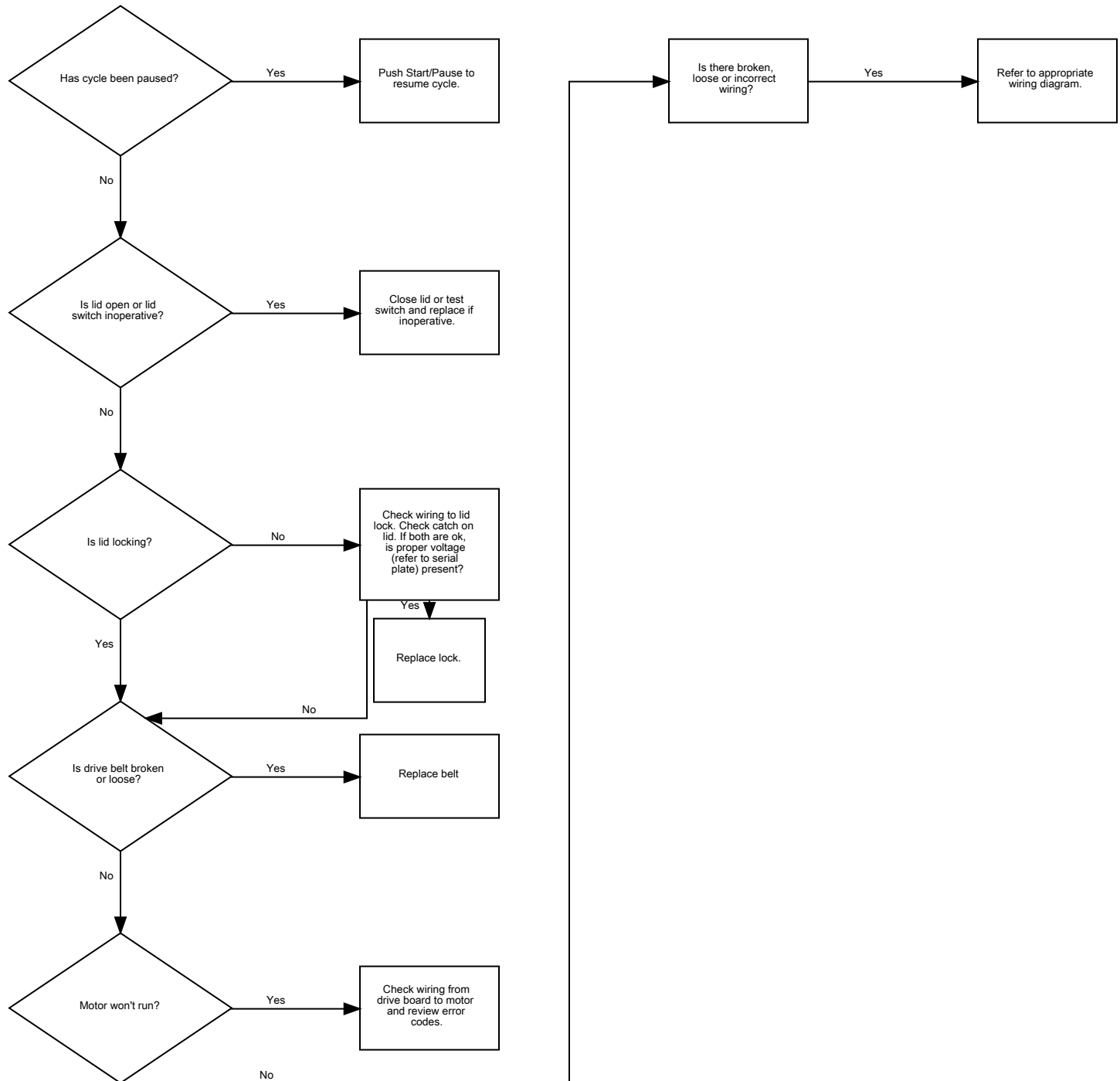
Pressure Sensor Error

WASH, RINSE STATUS lights flash 1 time

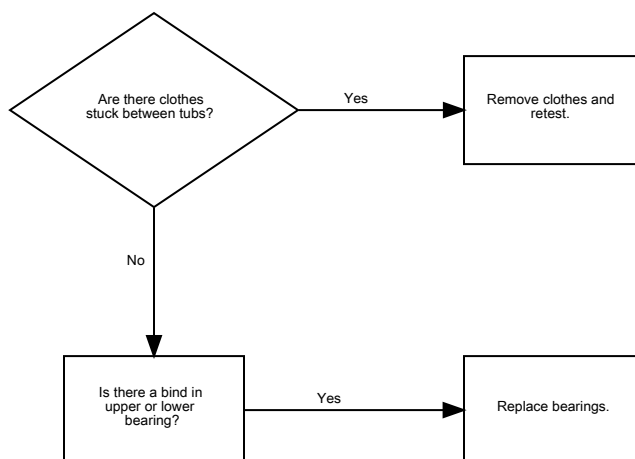


Slow Spin Or No Spin

Possibly WASH, SPIN, LID lights flash 2 times

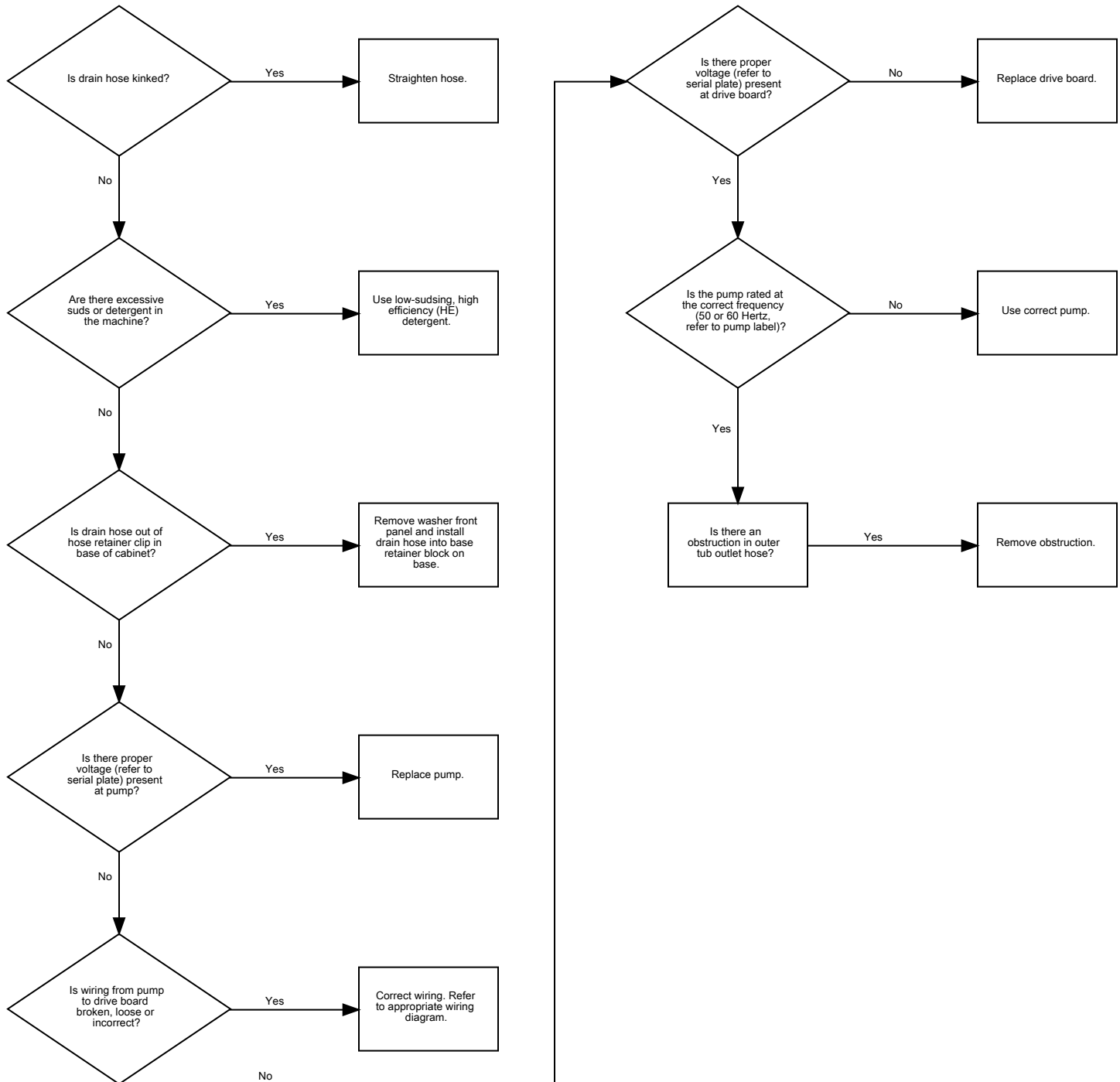


Washer Is Locked Up Or Binding

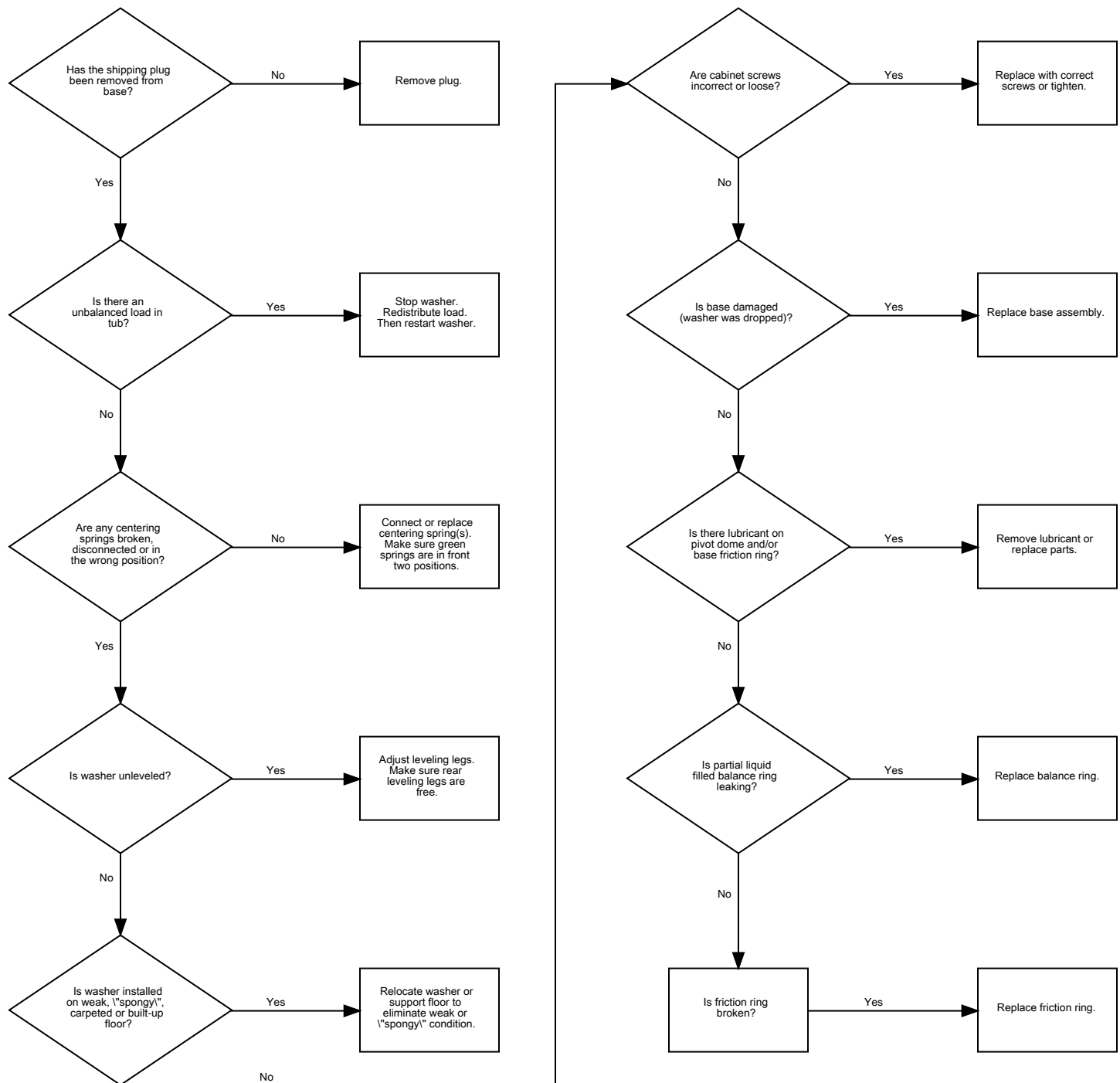


Outer Tub Does Not Empty

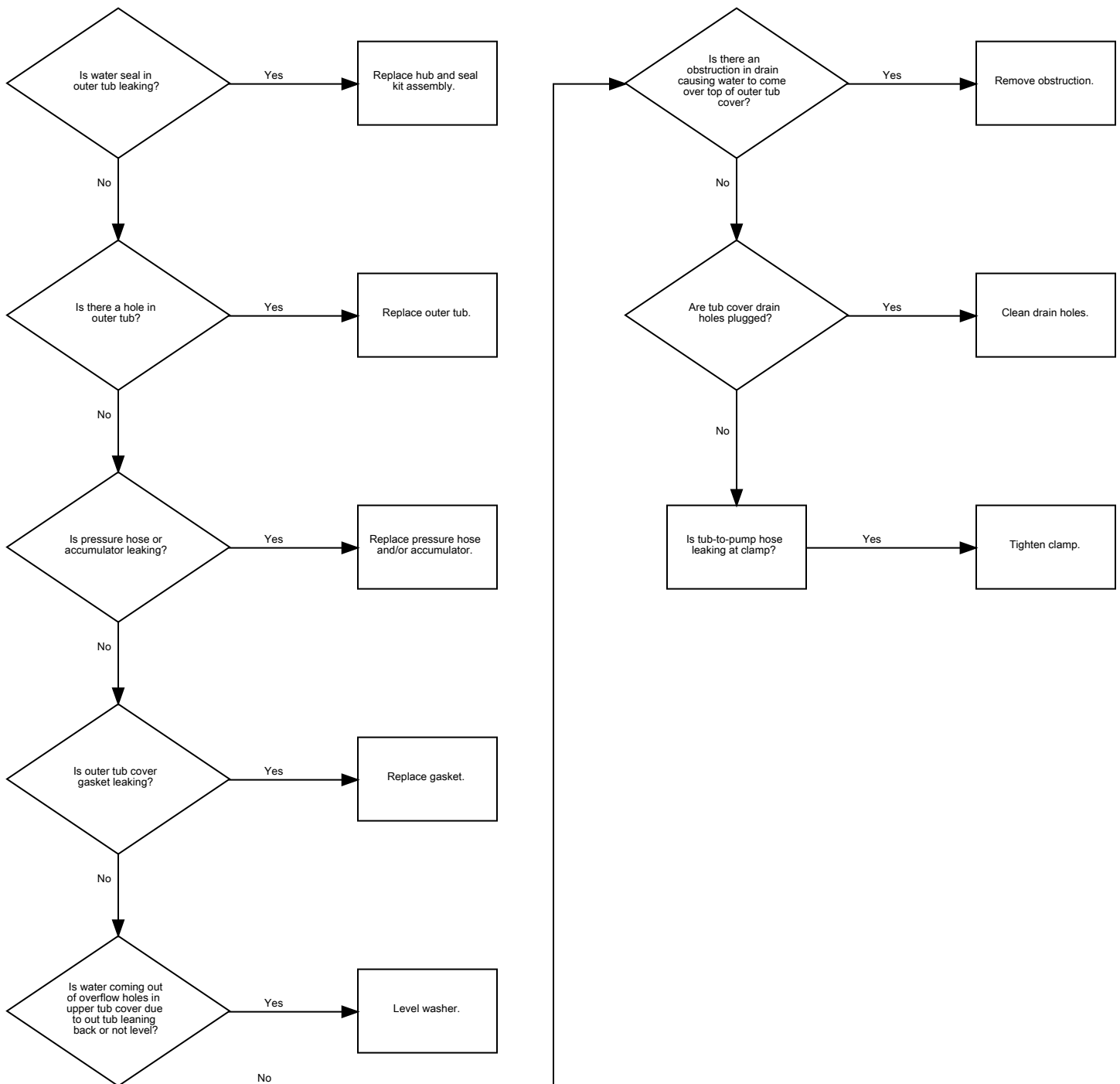
WASH, RINSE STATUS lights flash 3 or 4 times (Suds Lock or Slow Drain), or remain on continuously (Drain Error)



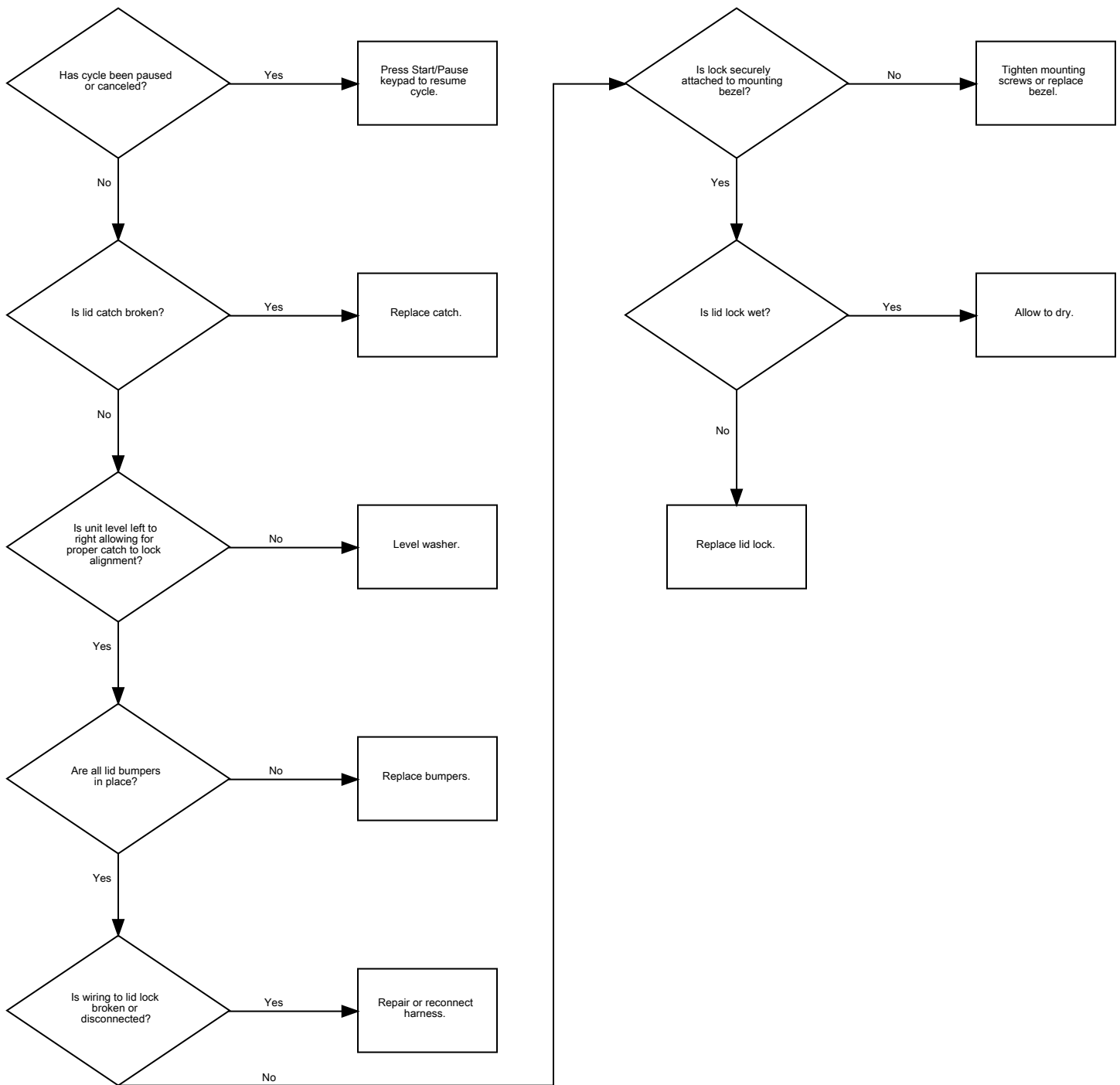
Excessive Vibration



Water Leaking From Outer Tub



Lid Does Not Lock



Adjustments

Leveling Legs

1. Place a level on the cabinet top and check if the washer is level from side to side and front to back.
2. If washer is not level, tilt washer back to access the front leveling legs. Loosen the locknuts and adjust legs by screwing into or out of washer base.
3. Once adjusted, tilt the washer forward on front legs and lower back down into position to set the rear self-leveling legs.
4. Washer must not rock. When washer is level and does not rock, tighten locknuts securely against bottom of washer base. If these locknuts are not tight, washer will not remain stationary during operation.

Improper installation or flexing of weak floor will cause excessive vibration.

Do not slide washer across floor once the leveling legs have been extended, as legs and base could become damaged.

NOTE: For areas with uneven floors, a No. 566P3 Adjustable Rear Leg Extension Kit is available as optional equipment at extra cost.

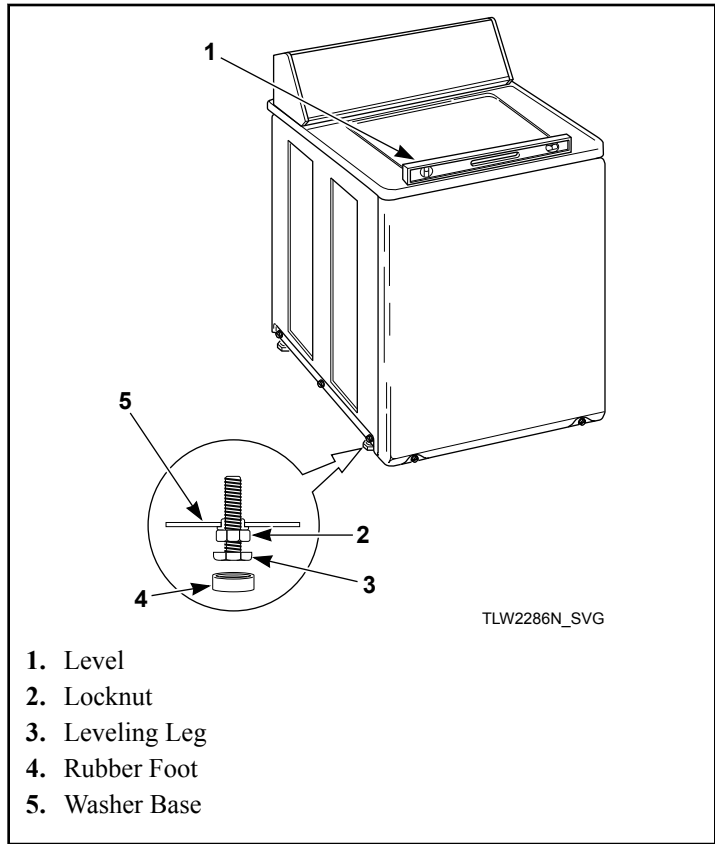


Figure 5

Belt

No belt adjustment is required.

Drive Bell Torque

When replacing or reinstalling the drive bell, torque bolts to these specifications.

Location	Minimum	Maximum
Drive Bell to Wash-tub and Hub	100 inch-pounds [11.3 Nm]	140 inch-pounds [15.8 Nm]
Drive Bell to Top of Drive Shaft	60 inch-pounds [6.78 Nm]	100 inch-pounds [11.3 Nm]

Table 11

Cycle Sequence Charts

Normal Eco Cycle

Description	Step Information			Step Time Minutes : Seconds	Water Options		Motor	
	Number	Status LED	Type		Temperature/ Miscellaneous	Drain	Speed	Reverse
Wash	1	Wash	Fill	4:00	TSEL	Hold	20	Yes
	2	Wash	Agitate	WT	Refill	Hold	WA	Yes
	3	Wash	Extract	5:30	-	Evacuate	INT	Deep Spin
Extra Rinse	4	Rinse	Fill	4:00	Cold +	Hold	0 ++	Yes
	5	Rinse	Agitate	3:00	Refill	Hold	WA	Yes
	6	Rinse	Extract	5:30	-	Evacuate	INT	Deep Spin
Rinse	7	Rinse	Fill	4:00	Cold +	Hold	0	Yes
	8	Rinse	Agitate	3:00	Refill	Hold	WA	Yes
Final Extract	9	Spin	Extract	14:30	-	Evacuate	FIN	Spray Spin

Table 12

Non-Eco Cycles

Description	Step Information			Step Time Minutes : Seconds	Water Options		Motor	
	Number	Status LED	Type		Temperature/ Miscellaneous	Drain	Speed	Reverse
Wash *	1	Wash	Fill	4:00	TSEL	Hold	20	Yes
	2	Wash	Agitate	WT	Refill	Hold	WA	Yes
	3	Wash	Extract	5:30	-	Evac	INT	Deep Spin
Extra Rinse	4	Rinse	Fill	4:00	Cold +	Hold	0 ++	Yes
	5	Rinse	Agitate	3:00	Refill	Hold	WA	Yes
	6 *	Rinse	Extract	5:30	-	Evac	INT	Deep Spin
Rinse *	7	Rinse	Fill	3:30	Cold +	Hold	0	Yes
	8	Rinse	Agitate	3:00	Refill	Hold	WA	Yes
Final Extract	9	Spin	Extract	10:00	-	Evac	FIN	High Spin

Table 13

Cycle Values

Cycle	Temperature	Load Size	Soil Level (or Spin Speed)	Agitate Time (Minutes) or Spin Speed (RPM)	Spin Speed Limits	
					Intermediate Spin	Final Spin
Heavy Duty	Warm/Cold	Auto Fill	Heavy	19	500	820
Perm Press	Warm/Cold	Auto Fill	Medium	10	400	665
Normal Eco (through Serial Nos. beginning 1810)	Warm/Cold	Auto Fill	Medium	10	500	820
Normal Eco (starting Serial Nos. beginning 1810)	Warm/Cold	Auto Fill	Medium	30	500	500
Delicate	Cold/Cold	Auto Fill	Medium	9	400	500
Spin Only	Cold/Cold	Auto Fill	Max	820	500	820
Handwash	Cold/Cold	Auto Fill	Medium	9	400	400

Table 14

Agitation Levels

Each cycle's agitation step is made up of a complex formula of long and short strokes, and clockwise and counterclockwise directions. Each movement is further defined by different lengths of time and speeds. The levels listed below are an approximate representation.

Cycle	Agitation Level
Heavy Duty	High
Perm Press	Medium
Normal Eco	High
Delicate	Medium
Spin Only	High
Handwash	Medium

Table 15

Keys

Cycle charts use the abbreviations defined below.

Abbreviation	Definition
FIN	Final Spin Speed Limit (Refer to <i>Table 14</i>)
INT	Intermediate Spin Speed Limit (Refer to <i>Table 14</i>)
TSEL	Temperature Selection Chosen by user
WA	Wash Agitate (Refer to <i>Table 15</i>)
WT	Wash Time (Refer to <i>Table 14</i>)
*	Skipped by Spin Only Cycle
+	If Warm Rinse is selected both Hot and Cold values are on
++	If Extra Rinse is selected on a Spin Only Cycle, then Speed will be 20 RPM during fill