



MINI-MANUAL

GFW450SSM
GFW450SPM
GFW430SSM
GFW400SCM

FOR SERVICE TECHNICIAN ONLY—DO NOT REMOVE OR DESTROY

⚠ WARNING **Electrical Shock Hazard**

Death or serious injury can result from failure to follow these instructions.

- Service by a qualified service technician only.
- Disconnect power before servicing this product.
- Reconnect all grounding devices after service.
- Replace all parts and panels before operating.

- This machine must be electrically grounded through the grounding lead in the 3-prong power cord. The cord must be plugged into a properly installed and grounded appliance outlet. If local codes require an additional ground connection, use an 16-gauge or larger wire to connect the washer cabinet to an established ground. In all cases the grounding method must comply with all local codes and ordinances.

⚠ AVERTISSEMENT **Risque de choc électrique**

Vous pouvez être tué ou gravement blessé si vous ne suivez pas ces instructions.

- Réparations seulement par un technicien qualifié.
- Débranchez l'alimentation électrique avant la réparation.
- Rebranchez tous les dispositifs de mise à la terre après la réparation.
- Remettez toutes les pièces et panneaux en place avant d'utiliser l'appareil.

- Cette machine doit être mise à la terre par la broche de mise à la terre du cordon d'alimentation à 3 broches. Le cordon doit être branché dans une prise d'alimentation pour un appareil électroménager correctement installée et mise à la terre. Si les codes locaux demandent une connexion de mise à la terre supplémentaire, utilisez un fil de calibre 16 ou supérieur pour connecter le cabinet de la laveuse à une mise à la terre établie. Dans tous les cas, la méthode de mise à la terre doit être conforme à tous les codes et ordonnances locaux.

⚠ ADVERTENCIA **Riesgo de Descarga Eléctrica**

Usted puede morir o sufrir lesiones graves si no siguen estas instrucciones.

- El servicio técnico sólo debe ser realizado por un técnico calificado.
- Desconecte el suministro de corriente antes de realizar el servicio técnico.
- Luego del servicio técnico, vuelva a conectar todos los dispositivos de conexión a tierra.
- Reemplace todas las piezas y paneles antes de utilizar.

- Esta máquina debe estar conectada a tierra a través de una clavija de conexión a tierra del cable de alimentación de 3 clavijas. El cable debe estar enchufado en un tomacorriente para un aparato electrodoméstico correctamente instalado y conectado a tierra. Si los códigos locales requieren una conexión a tierra adicional, utilice un cable de calibre 16 o mayor para conectar el gabinete de la lavadora a una conexión a tierra establecida. En todos los casos, el método de puesta a tierra debe cumplir con todos los códigos y ordenanzas locales.

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IMPORTANT Electric Discharge (ESD) Sensitive Electronics

ESD problems are present everywhere. ESD may damage or weaken the electronic control assembly. The new control assembly may appear to work well after repair is finished, but failure may occur at a later date due to ESD stress.

- Use an anti-static wrist strap. Connect wrist strap to ground connection point or unpainted metal in the appliance.

—OR—

Touch your finger repeatedly to ground connection point or unpainted metal in the appliance.

- Before removing the part from its package, touch the anti-static bag to a green ground connection point or unpainted metal in the appliance.
- Avoid touching electronic parts or terminal contact; handle electronic control assembly by edges only.
- When repackaging failed electronic control assembly in anti-static bag, observe above-mentioned precautions.

Diagnostic Guide

Before testing washer operation, check the following:

- Is the power cord firmly plugged into a live circuit?
- Has a household fuse blown or circuit breaker tripped? Time delay fuse?
- Are both hot and cold water faucets open and water supply hoses unobstructed?

Before opening the washer make sure it is unplugged from power outlet.

- Check all connections before replacing components. Look for broken or loose wires, failed terminals, or wires not pressed into connections far enough.
- The most common cause for control failure is corrosion on connectors. Therefore, disconnecting and reconnecting wires will be necessary throughout test procedures.
- Connectors: Look at top of connector. Check for broken or loose wires. Check for wires not pressed into connector far enough to engage metal barbs.
- Resistance check must be made with power cord unplugged from outlet, and with wiring harness or connectors disconnected.

Programming the Control Board

- The replacement control board will always enter into test mode t01 on initial power-up.
- If replacing the control board, the washer will not function until the replacement control board has been programmed.

To program the replacement control board:

1. Reconnect power to the washer. (The display will now show “---”, which means no model has been selected.)

2. Rotate the cycle knob until the correct model number is displayed:

For GFW450SSM and GFW450SPM models

Display “2” = GFW450SSM and GFW450SPM

For GFW430SSM models

Display “1” = GFW430SSM

For GFW400SCM models

Display “3” = GFW400SCM

3. Press and hold the **Start** key for 3 seconds (or until a second beep is sounded).

4. Press the **Power** key to reset the control.

NOTE: If an error is made in programming the control, enter test mode and select t01. Then repeat steps 2 through 4.

Service Mode

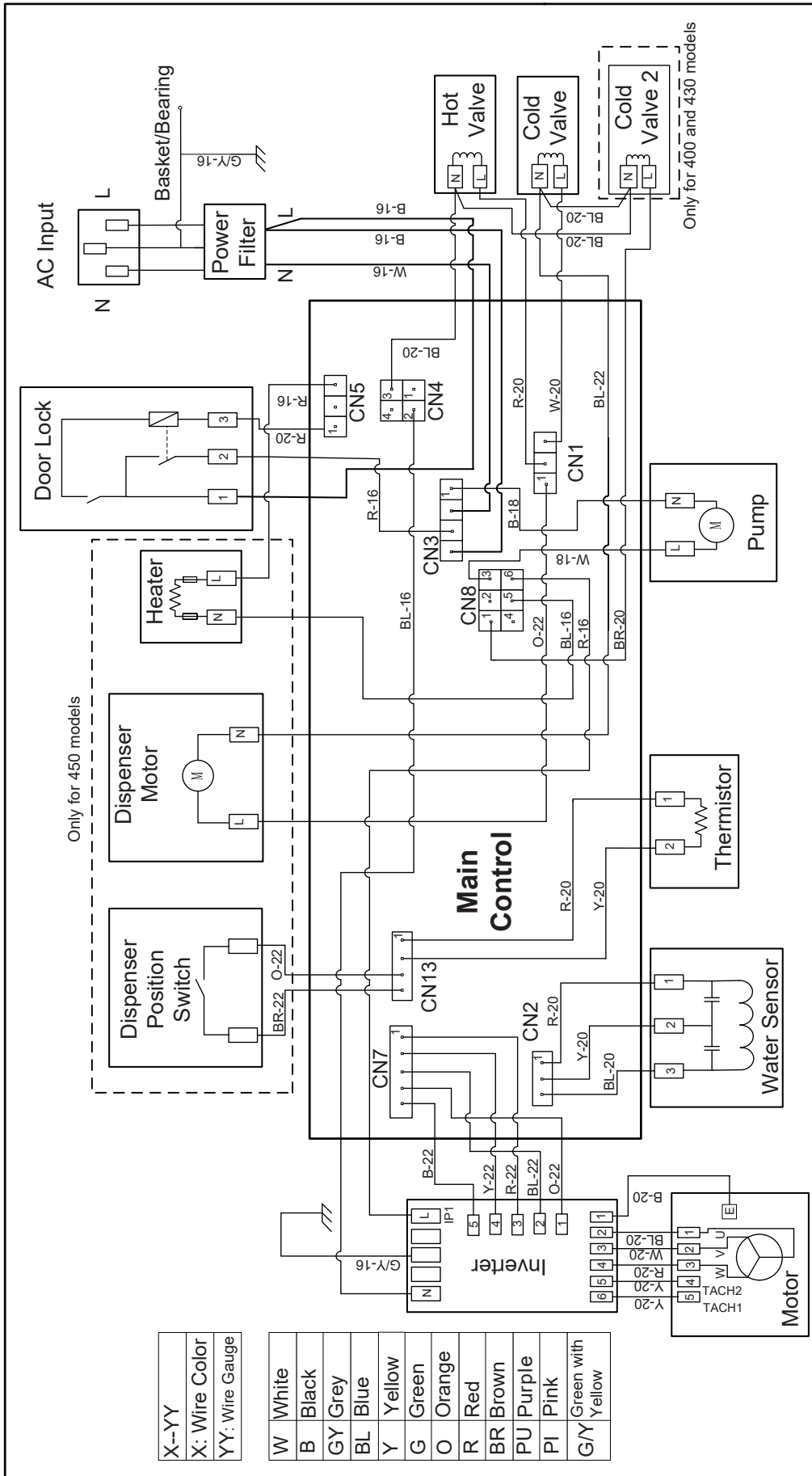
To Enter:

Alternately press **Temp - Delay Wash** keys (minimum of 4 button presses within 30 seconds of plugging in washer).

To Exit:

Repeat press **Power** key.

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Component	Resistance (Ω)	Voltage (V)
Water valve	980	120 AC
Thermistor	15	5 DC
Door Lock	47	120 AC
Dispenser	1470	120 AC
Pump	14	120 AC
Motor (U-V, U-W, V-W)	5	195 AC

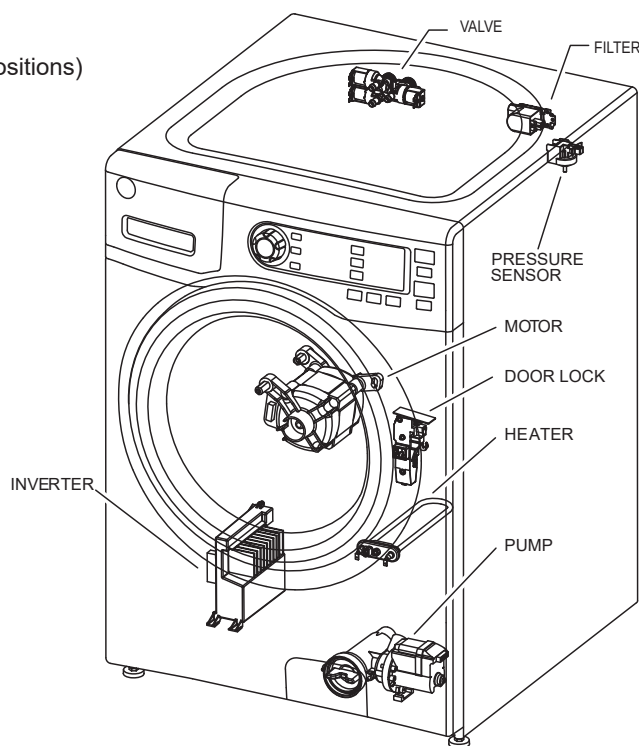
Water Level	
Frequency (Hz)	Inches of water
25694	0
25393	1
25013	2
24657	3
24292	4
23939	5
23586	6
23242	7
22904	8
22572	9

Thermistor Resistance Table		
Temp (°C)	Temp (°F)	Resistance(Ω)
0	32	35975
5	41	28516
10	50	22763
15	59	18279
20	68	14772
25	77	11981
30	86	9786
35	95	8047
40	104	6653
45	113	5523
50	122	4608
55	131	3856
60	140	3243
65	149	2744
70	158	2332
75	167	1990
80	176	1704
85	185	1464
90	194	1262
95	203	1093
100	212	950

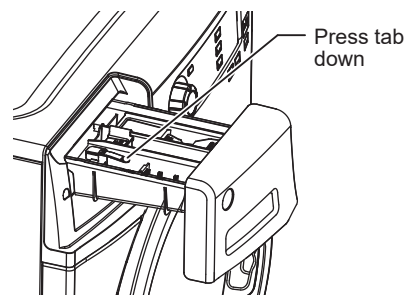
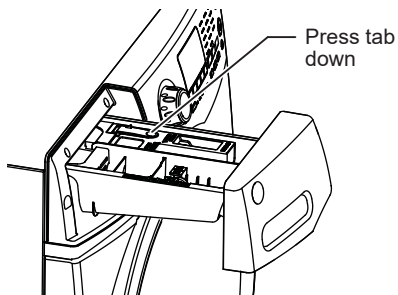
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SYSTEM DRAWING

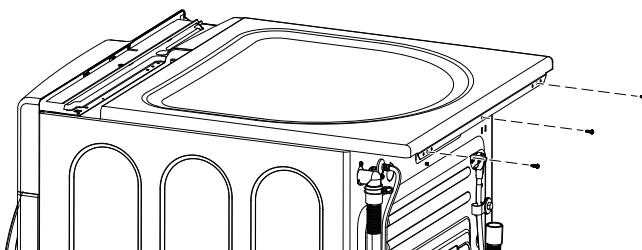
(All models have parts in the same positions)



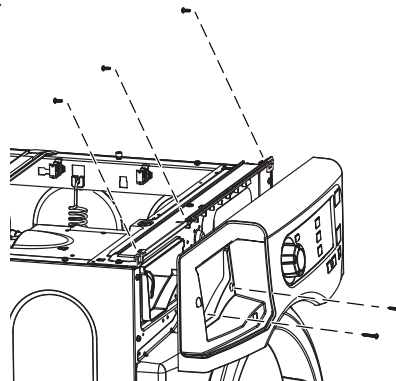
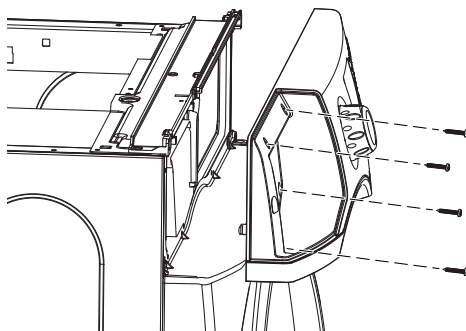
1. Remove the detergent drawer (left is for 450\430 models and right is for 400 models).



2. Remove top panel. (If only servicing the control panel for 450/430 models, this step 2 is not required.)



3. Remove control panel (left is for 450\430 models and right is for 400 models).



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DETAILS FUNCTION

	Test Name	Action	Sequence
t01	Personality ID	Press Start	Displays “---” if new board.
		Rotate knob	Display “1”=GFW430SSM. Display “2”=GFW450SSM and GFW450SPM. Display “3”=GFW400SCM.
		Press and hold Start	Program the desired model.
		Press Power	Returns to “t01”.
t02	Fault Codes	Press Start	Displays most recent error code (E00=none).
		Rotate the knob	Displays previous error code (up to previous 10).
		Press and hold Start	Clear all error codes (and then displays E00).
		Press Power	Returns to “t02”.
t03	UI Software Version	Press Start	Alternate “UL” and UL software version.
		Press Start	Alternate “cod” and Control Software version.
		Press Start	Alternate “Inv” and Inverter Software version.
		Press Power	Returns to “t03”.
t04	LED's	Press Start	Loops on lighting LED's, LCD, and cycle ID's.
		Press any button	Beeps when depressed.
		Press Power	Returns to “t04”.
t05	Pump	Press Start	Displays “P” and pump for 60 seconds.
		Press Power	Returns to “t05”.
t06	Water Level	Press Start	The control will display “water level frequency”. The water level frequency continues updating on the 7-segment display until reaches wash 1 level.
		Press Start	Fill, until reaches wash 2 level.
		Press Start	Fill, until reaches overflow level.
		Press Power	Returns to “t06”.
t07	Cold Water Valve (and heater if applicable)	Press Start	For GFW400SCM and GFW430SSM models only: Displays temperature in °F, turns on cold water until the wash 1 level is reached. For GFW450SSM and GFW450SPM models only: Displays temperature in °F, turns on cold water and fills the tub until the wash 1 level is reached. Then turns on heater for a maximum of 5 minutes.
		Press Power	Pumps out water and returns to “t07”.
t08	Hot water valve (and heater if applicable)	Press Start	Displays “StE”. The control will turn on the steam water valve and fill the tub until the wash 1 level is reached. The heater will then be turned on for a maximum of 1 minute (only for GFW450SSM and GFW450SPM models).
		Press Power	Turns off the heater and returns to “t08”.
t10	Tumble Tub	Press Start	Displays “tt” and tumbles tub alternating the direction every 5 seconds.
		Press Power	Stops tumbling and returns to “t10”.
t11	Spin (Water Pressure Sensor must work)	Press Start	Spins to 400 RPM displaying increasing RPM.
		Press Start	For GFW400SCM, GFW430SSM, GFW450SSM and GFW450SPM models only: Spins to 1300RPM (displays “D00”).
		Press Power	Stops spinning and returns to “t11” until it stops.
t12	Dispenser	Press Start	For GFW400SCM and GFW430SSM models only: Start - Displays “ddt” and turns on HV to fill detergent compartment. Start - Displays “bdt” and turns on CV2 to fill bleach compartment. Start - Displays “Fdt” and turns on CV1 and CV2 to fill softener compartment. Start - Displays “Hct” and turns on CV1 and HV to fill detergent compartment.
		Press Start	For GFW450SSM and GFW450SPM models only: Start - Displays “pdt” and turns on HV to fill pre-wash compartment. Start - Displays “ddt” and turns on HV to fill main dispensing compartment. Start - Displays “bdt” and turns on CV to fill bleach compartment. Start - Displays “Fdt” and turns on CV to fill softener compartment.
		Press Power	Pumps out water and returns to “t12”.
t13	EOL	Press Start	Starts EOL test sequence (NOT used in repair).
		Press Power	Returns to “t13”.

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TROUBLESHOOTING CHART

Fault Code(s)	Name & Description	Repair Action
22, 23	Fill Timeout/Slow Fill. Flood Protect Drain Occurred.	Test water valves using T07 and T08. Test Dispenser using T12. Ensure manual water valves are fully open. • Check if water strainers on solenoid valve assembly are clogged. • Check for obstructions inside inlet water hoses. • Ensure solenoid valves do not leak when the valves are de-energized and the washer is powered down. • Measure coil resistance for both valves; if outside range (1000–1250 ohms at room temperature), replace solenoid valve assembly. • Check wire harness and connections, check for proper voltage to components. IF ABOVE STEPS DO NOT CLEAR THE PROBLEM, OR FOR ERROR CODE 23: • Replace solenoid valve assembly.
31	Drain Timeout/Slow Drain.	Run Drain test t05. • Ensure pump strainer is clean and free of debris. • Check for obstruction inside the drain hose. • Check pump impeller blades and bearing; if evidence of blade damage or seized bearings are present, replace the pump. • Check electrical connections at the pump motor and harness. • Measure pump motor resistance; if outside range (9–14 ohms at room temperature) replace the pump.
38, 39	Unable to Find Correct Reservoir. Dispenser Timeout.	Run dispenser test t12. • Check for obstruction in dispenser mechanism and linkages. • Check electrical connections at dispenser motor feedback switch and in harness. • Check electrical connections of water valves in the harness. IF ABOVE STEPS DO NOT CLEAR THE PROBLEM: • Replace dispenser motor assembly.
42, 45, 46, 47, 48	Over trip/Over current. No speed feedback. Motor Over temp. Heatsink Over temp. Open Circuit.	• Ensure all 4 shipping bolts have been properly removed. • Remove all foreign objects that may be lodged between inner and outer tub. • Look for signs of seized bearing(s) on tub and drum motor, replace components as necessary. • Inspect condition and mounting of door gasket, replace and re-mount as necessary. • Ensure inner tub (drum) can rotate freely. • Check harness and connections between inverter and motor. IF ABOVE STEPS DO NOT CLEAR THE PROBLEM: • Replace inverter or drum motor.
4A, 4B, 4C, 50, 52, 54	Under volts/Power up/ Over volts. Unexpected Motor Fault. Motor Control Wake Error. No motor response.	• Measure AC outlet voltage, ensure correct range (102V to 132V AC). • Check electrical connections at the drum motor, inverter. • Check harness integrity between main control and inverter. • Unplug the washer, wait 30 seconds, restart the washer. • If the fault persists and re-appears – replace the motor drive.
56	Unexpected reset.	• Replace the main control.
57, 58	Power interruption data failed. Communication Failed. Model information failed.	• Unplug the washer, wait 30 seconds, re-start the washer.
60, 61, 63, 64	Door Lock/Unlock Failure. Unexpected Door Open.	• Check integrity of wiring/connections between main control and DOOR LOCK mechanism. • Investigate DOOR LOCK mechanism, check door microswitch operation, lock and unlock solenoid continuity, contact integrity; replace DOOR LOCK mechanism if necessary.
62	System Contact Failure.	• Check integrity of wiring/connections, look for insulation breakdown and short circuit conditions on the harness, replace harness if necessary. • Check integrity and electrical connections of all loads (heater, pump, pressure switch, door lock, solenoid valves, dispenser motor), replace respective components if necessary.
65	Water Level Sensor Failure.	Run water level test t06. • Check integrity of wiring/connections between Main Control and Water Level Sensor. • Check integrity of Water Level Sensor, replace if necessary.
66, 67	Water Temperature Sensor Open. Water Temperature Sensor Short.	Run cold water valve test t07. • Check integrity of wiring/connections between main control and Thermistor Assembly. • Using ohmmeter, measure Thermistor resistance; if outside expected range, replace Thermistor Assembly.