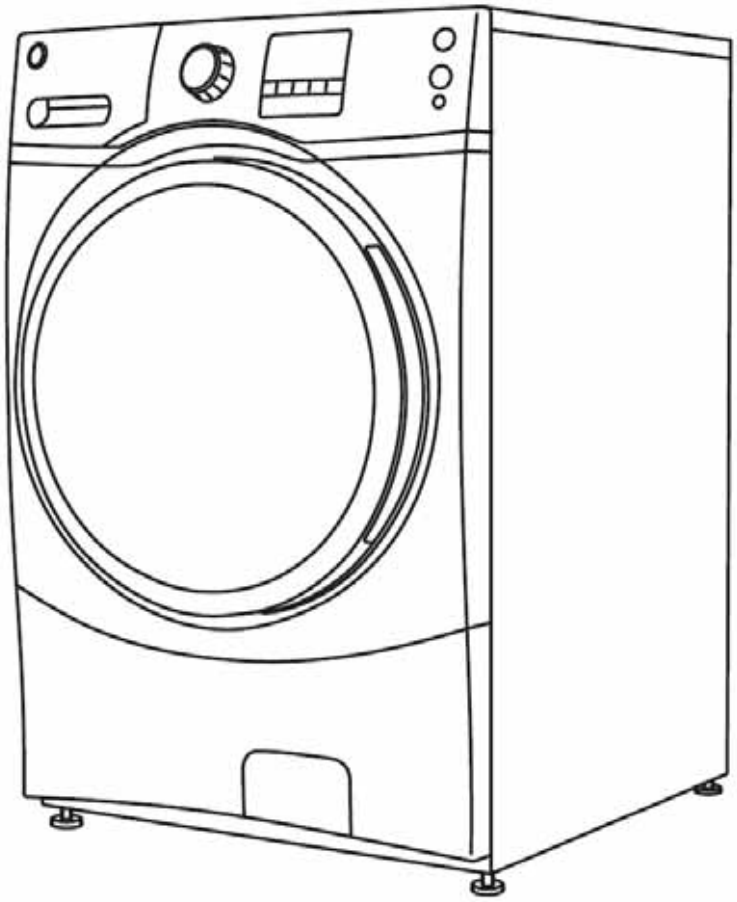
GE Appliances

Technical Service Guide

December 2016

GE Appliances Front Load Washer

GFWS1705H
GFWS1700H
GFWN1600J
GFWN1300J
GFWH1200H
GFWN1100H
GFW400SCK
GFW450SPK
GFW450SSK



GE Appliances
Louisville, Kentucky 40225

31-9261

Safety Information

IMPORTANT SAFETY NOTICE

The information in this service guide is intended for use by individuals possessing adequate backgrounds of electrical, electronic, and mechanical experience. Any attempt to repair a major appliance may result in personal injury and property damage. The manufacturer or seller cannot be responsible for the interpretation of this information, nor can it assume any liability in connection with its use.

WARNING

To avoid personal injury, disconnect power before servicing this product. If electrical power is required for diagnosis or test purposes, disconnect the power immediately after performing the necessary checks.

RECONNECT ALL GROUNDING DEVICES

If grounding wires, screws, straps, clips, nuts, or washers used to complete a path to ground are removed for service, they must be returned to their original position and properly fastened.

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Safety Requirements

GE Factory Service Employees are required to use safety glasses with side shields, safety gloves and steel toe shoes for all repairs.

Steel Toed Work Boot

Electrically Rated Glove and Dyneema® Cut Resistant Glove Keeper

Dyneema® Cut Resistant Glove

Cut Resistant Sleeve(s)

Plano Type Safety Glasses

Prescription Safety Glasses
Safety Glasses must be ANSI Z87.1-2003 compliant

Brazing Glasses

⚠ WARNING

Prior to disassembly of the washer to access components, GE Factory Service technicians are REQUIRED to follow the Lockout /Tagout (LOTO) 6 Step Process:

Step 1 Plan and Prepare	Step 4 Apply LOTO device and lock
Step 2 Shut down the appliance	Step 5 Control (discharge) stored energy
Step 3 Isolate the appliance	Step 6 “Try It” verify that the appliance is locked out

Nomenclature

G F W S 1 7 0 5 H 0 D G

Brand
G: GE Appliances
H: Hot Point

Configuration
F: Front Load
T: Top Load - Rear Control
N: Top Load - Front Control
U: Unitized

Platform
W: Washer
D: Vented Dryer - Std
V: Vented Dryer - Long

Backsplash Control/Platform
N: No heater
H: With heater
S: With steam

Options Package

Model Year
G:

Engineering Revision
Alpha or Numeric

Color
WW: White
DG: Diamond Gray

The nomenclature breaks down and explains what the letters and numbers mean in the model number.

Serial Number
The first two characters of the serial number identify the month and year of manufacture. The letter designating the year repeats every 12 years.

Example: AG123456T = January, 2016

A – JAN	2024 – Z
D – FEB	2023 – V
F – MAR	2022 – T
G – APR	2021 – S
H – MAY	2020 – R
L – JUN	2019 – M
M – JUL	2018 – L
R – AUG	2017 – H
S – SEP	2016 – G
T – OCT	2015 – F
V – NOV	2014 – D
Z – DEC	2013 – A

The nomenclature tag is located on the bottom front corner on the right side of the cabinet.

NOTE: The technical sheet is located behind the control panel.

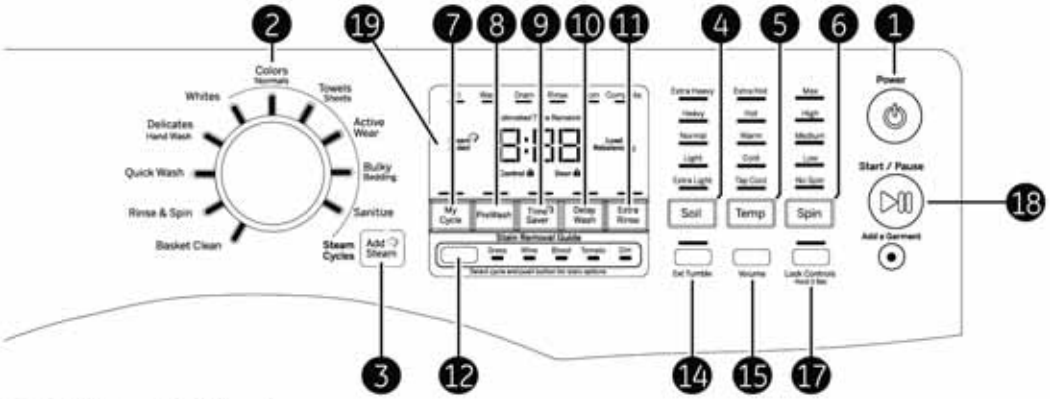
Introduction

The new GE Front Load Washer has the following features:

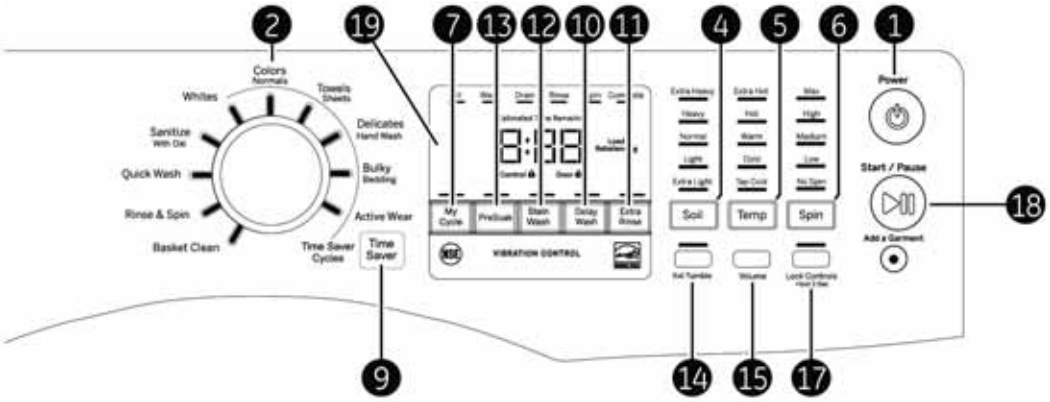
- Energy Star Qualification assures less energy waste and lower utility bills.
- 10 wash cycles include a variety of fabric-specific settings, from Extra-Heavy Cottons to Easy-Care Colors.
- My Cycle selection saves a favorite cycle for future use.
- Dispenser adds diluted detergent, bleach, and fabric softener at the correct time during the wash or rinse cycles.
- A nozzle sprays fresh water into the tub to reduce time of rinse cycle (only for 1700 and 1705).
- End-Of-Cycle Signal alerts user when the cycle is done, saving time between loads. Signal volume can be adjusted.
- Overflow protection activates the drain pump whenever water reaches overflow level.
- Service test mode built-in. Specific washer components can be operated. Error codes are recorded and accessible on the control panel's 7-segment display.
- Two piece plastic outer tub is formed from tough, lightweight polypropylene.
- The wash tub is constructed of durable stainless steel.
- Two suspension springs and four dampers provide maximum off-balance load protection with minimal vibration transfer to the floor.
- Intricate door lock keeps the door locked during operation.
- Blackout protection. Restoring power resumes cycle where it was interrupted. Eliminating restarting entire wash cycle.
- Flush door handle.
- UV stabilizers are utilized on the control panel, top cover, and door outer panel to prevent yellowing when exposed to sunlight.
- The GE dryer can be installed on top of the washer.
- Pedestal available at additional cost. White (model number SBSD227FWW) and Diamond Gray (model number SBSD227FDG).

Control Features

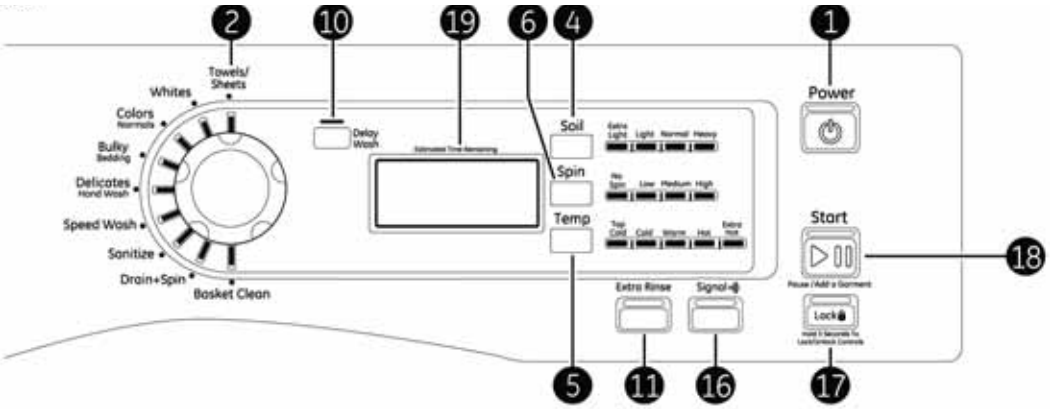
Models: GFW450, GFWS1700 and GFWS1705 - Steam Washer with Time Saver



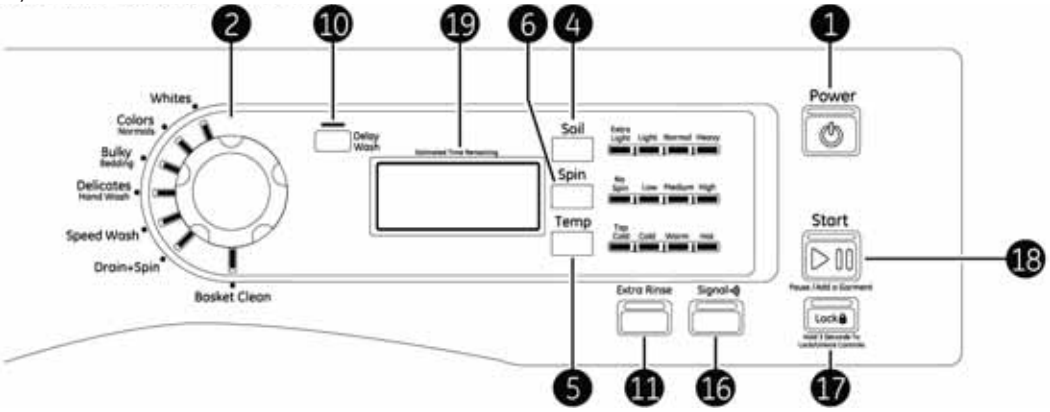
Model: GFWN1600 - Washer with Time Saver



Model: GFWH1200



Models: GFW400, GFWN1100 and GFWN1300



Washer Features

1 Power

Press to “wake up” the display. If the display is active, press to put the washer into standby mode.

NOTE: Pressing *Power* does not disconnect the appliance from the power supply.

2 Wash Cycles

The wash cycles are optimized for specific types of wash loads. The chart below will help match the wash setting with the loads.

Colors/Normals*	For heavily to lightly soiled colorfast cottons, household linens, work and play clothes.
Whites*	For heavily to lightly soiled white laundry, work and play clothes.
Bulky/Bedding*	For large items such as comforters, blankets, small rugs and similar bulky items.
Active Wear* (on some models)	For active sports, exercise and some casual wear clothes. Fabrics include modern technology finishes and fibers such as spandex, stretch and micro-fibers.
Sanitize* (on some models)	For increased water temperature which will sanitize and kill more than 99.9% of many common bacteria found in home laundry. For best results, select the extra heavy soil setting when using the *Sanitize* cycle. NSF Protocol P172 Sanitization Performance of Residential and Commercial, Family-Sized Clothes Washers
Sanitize with Oxi (on some models)	The *Sanitize with Oxi* cycle, when using an Oxi additive along with a detergent, is designed to remove 99.9% of bacteria found in home laundry. Measure the detergent and the Oxi products carefully. Using the amounts appropriate for a large heavily soiled load, follow the detergent and the Oxi product label instructions. The detergent should be added using the dispenser instructions as shown on page 9 of this guide. Place the Oxi product directly in the bottom of the wash basket, before adding the clothes. The washer hot water supply connection must provide a minimum of 120°F to ensure the effectiveness of this cycle. NOTE: The default Sanitize With Oxi cycle water temperature can NOT be changed. The *Sanitize With Oxi* cycle is certified by NSF International, an independent third party testing and certification organization. The certification verified that the cycle reduced 99.9% of bacteria typically found in residential laundry and that no significant contamination is transferred to subsequent washer loads. Only the *Sanitize With Oxi* cycle has been designed to meet the requirements of NSF Protocol P172 for sanitizing effectiveness. NSF Protocol P172 Sanitization Performance of Residential and Commercial, Family-Sized Clothes Washers

(*Continued next page*)

2 Wash Cycles

Towels/Sheets* (on some models)	For items such as towels, sheets, pillowcases and dish rags.
Delicates/Hand Wash	For items labeled hand-washable with light soils. Provides gentle tumbling and soak during wash and rinse.
Speed Wash or Quick Wash	For lightly soiled items that are needed in a hurry. Cycle time is approximately 30 minutes, depending on selected options.
Rinse & Spin (on some models)	To quickly rinse and spin out any items at any time. To achieve a Drain + Spin, deselect the Extra Rinse option.
Drain + Spin (on some models)	To quickly drain and spin out any items at any time.
Basket Clean	Use for cleaning the basket of residue and odor. Recommended use of at least once per month. NOTE: Never load laundry while using *Basket Clean*. The laundry may become damaged. See the Care and Cleaning section.

* The *Add Steam* option (on some models) can be used with these cycles.

3 

Add Steam (on some models)
Add Steam adds steam into the washer to assist with loosening stains on the *Whites*, *Colors/Normal*, *Towels/Sheets*, *Active Wear* or *Power Clean* (depending on model), *Bulky Bedding* or *Sanitize* cycles.

To use:
1. Turn power *ON* and select a wash cycle.
2. Select the *Add Steam* button to activate steam.
3. Press the *Start/Pause* button.

4 

Soil
Change the Soil level to increase or decrease the wash time to remove different amounts of soil.

To change the *Soil* level, press the Soil level button until the desired setting as been reached. Choose between Extra Light, Light, Normal, Heavy or Extra Heavy soil levels.

5 

Temp
Adjust to select the proper main water temperature for the wash cycle. The PreSoak and PreWash rinse water is always cold to help reduce energy usage and reduce setting of stains and wrinkles.
Follow the fabric manufacturer's care label when selecting the wash temperature.

To change the wash temperature, press the wash Temp button until the desired setting has been reached. Choose between Tap Cold, Cold, Warm, Hot or Extra Hot (Extra Hot is available on models equipped with a heater). By design, to protect fabrics, not all wash temperatures are available for certain wash cycles.
NOTE: The first 10 seconds of the wash fill is always cold. This feature assists in conditioning the fabric and preventing stains from setting on garments.

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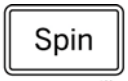
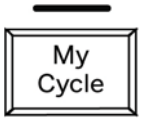
6		Spin Changing the *Spin* speed changes the final spin speed of the cycles. Always follow the garment manufacturer's care label when changing the *Spin* speed.	To change the *Spin* speed, press the *Spin* speed button until the desired setting has been reached. Choose between No Spin, Low, Medium, High or Max. Higher spin speeds are not available on certain cycles, such as *Delicates*. Higher spin speeds remove more water from the clothes and will help reduce dry time, but may also increase the possibility of setting wrinkles on some fabrics.
7		My Cycle *(on some models)* To save a favorite cycle, set the desired settings for wash cycle, soil level, spin speed and wash temperature settings and hold down the *My Cycle* button for 3 seconds. A beep will sound to indicate the cycle has been saved. To use the custom cycle, press the *My Cycle* button before washing a load. To change the saved cycle, set the desired settings and hold down the *My Cycle* button for 3 seconds.	NOTE: When using *My Cycle*, wash options cannot be modified after the cycle has been started. NOTE: If wash options are changed with the *My Cycle* before starting the cycle, the *My Cycle* light will turn off and the user will be returned to the base cycle.
8		PreWash (on some models) Prewash is an extra wash before the main wash. Use it for heavily soiled clothes or for clothes with a care label that recommends prewashing before washing. Be sure to add liquid or powder high-efficiency detergent, or the proper wash additive to the prewash dispenser. PreWash must be selected prior to pressing *Start*.	The *PreWash* feature will fill the washer with cold water (adding the prewash detergent), tumble the clothes, drain and spin. Then the washer will run the selected wash cycle. NOTE: In some special cycles, the prewash is selected automatically as the default. This selection can be modifed at any time.

(*Continued next page*)

9

Time Saver (on some models)

Use this option to reduce the overall wash cycle by at least 20% without sacrificing wash performance. This feature is available on all cycles except Basket Clean, Sanitize, Rinse + Spin, and Quick Wash.

This option will modify the wash cycle, slightly raising the wash temperature and using more water to deliver equal wash performance as the basic cycle. All other features, such as *Extra Rinse*, *Add Steam*, etc., can be used with *Time Saver* but may adjust the total wash time.

To use:

1. Turn power on and select a wash cycle which has *Time Saver* as an option.

2. Make any adjustments to *Soil*, *Temp* and *Spin* as desired.

3. Press the *Time Saver* button to reduce the overall wash time.

4. Press the *Start/Pause* button.

10

(depending on model)

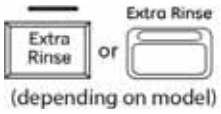
Delay Wash

Delay the start of a wash cycle for up to 24 hours. Press the *Delay Wash* button to choose the amount of time wanted to delay the start of the wash cycle. Once the desired time is reached, press the *Start* button. The machine will count down and start automatically at the correct time.

NOTE: If it is forgetten to fully close the door, a reminder signal will beep as a reminder to do so.

NOTE: If the door is opened when the delay is counting down, the machine will enter the pause state. The door must be closed and the *Start* button must be pressed again in order to restart the countdown.

11



(depending on model)

Extra Rinse

This option allows for an extra rinse during a cycle to remove excess dirt and detergent from soiled loads.

On models with *Rinse & Spin* cycle, a drain and spin cycle can be achieved by pressing the *Extra Rinse* button until the light is no longer illuminated.

(*Continued next page*)

12

or

Stain Removal Guide

(on some models)

The *Stain Removal Guide* is preprogrammed with the ideal wash and rinse settings to tackle five common stains. To use this feature, select the desired wash cycle and then press the *Stain Removal Guide* button until the stain desired to be removed is highlighted. Next, press the *Start* button.

For some stains, a prewash will be selected automatically. If desired, add detergent or wash additive to the prewash dispenser. *Add Steam* cannot be selected along with this feature.

Stain Wash

(on some models)

The *Stain Wash* modifier can be used with all cycles except *Rinse & Spin* and *Basket Clean* and is preprogrammed with the ideal wash and rinse settings to tackle common stains. To use this feature, select the desired wash cycle and then press the *Stain Wash* button.

Once selected, press the Start button to start the cycle. For some stains, a *PreSoak* will be selected automatically.

13

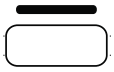
PreSoak (on some models)

For soaking garments prior to the wash cycle. This option begins with a brief tumble and then proceeds to soak the clothes with water and detergent for a specified period of time. Once complete, the cycle will begin automatically. *PreSoak* must be selected prior to pressing *Start*.

The *PreSoak* time will add an additional 30 minutes to the overall wash time.

High-efficiency detergent from the main wash compartment in the dispenser is used for the *PreSoak* period and main wash cycle.

14



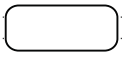
Extended Tumble (on some models)

Freshly tumbles garments periodically for up to 8 hours after the wash cycle is complete to lessen the setting of wrinkles and creases when the user is not able to move clothing to the dryer right away.

At the end of the cycle, the display will scroll “END” and after ten minutes the Extended Tumble will begin. It can be stopped at any time by pressing the Power button.

NOTE: The *Extended Tumble* option cannot be added to the *My Cycle* feature.

15



Volume

This button has two functions:

- To change the loudness of the end of cycle signal, press the button as many times as needed to reach the desired volume. There are four sound levels including OFF.
- To turn the button sounds ON/OFF, press and hold the button for 3 seconds.

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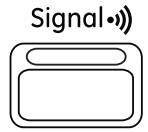
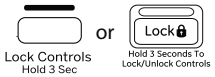
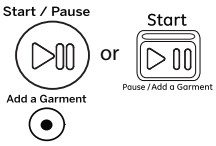
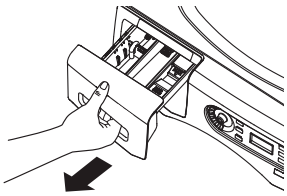
16		Cycle Signal Use the Signal pad to change the volume of the end of cycle signal.	Press the pad until the desired volume has been reached.
17	 (depending on model)	Lock Controls or Lock (depending on model) Lock the controls to prevent any selections from being made. Or lock or unlock the controls after a cycle has been started. Children cannot accidentally start the washer by touching buttons with this option selected. To lock the washer, press and hold the Lock Controls or Lock button for 3 seconds.	To unlock the washer controls, press and hold the Lock Controls or Lock button for 3 seconds. A sound is made to indicate the lock/unlock status. The indicator light above the button will illuminate when the controls are locked. NOTE: The *Power* button can still be used when the machine is locked.
18	 (depending on model)	Start/Pause-Add A Garment Press to start a wash cycle. If the washer is running, pressing it once will pause the washer and unlock the door. It will take a few seconds for the door to unlock after pressing Pause. Press again to restart the wash cycle. NOTE: If the washer is paused and the cycle is not restarted within 15 minutes, the current wash cycle will be cancelled.	NOTE: In some cycles the washer will drain first, then unlock the door when it is paused. NOTE: The washer performs automatic system checks after pressing the Start button. Water will flow in 45 seconds or less. It is normal to hear the door lock and unlock before water flows.
19	 (appearance will vary and not all features on all models)	Display Displays the approximate time remaining until the end of the cycle.	NOTE: The cycle time is affected by the water pressure in the home and the balance of the load in the washer. The time remaining on the display may increase to accommodate a slower spin speed to handle unbalanced loads. On some models, cycle status is also displayed and certain features such as Delay Wash or Steam are shown indicating they have been selected.

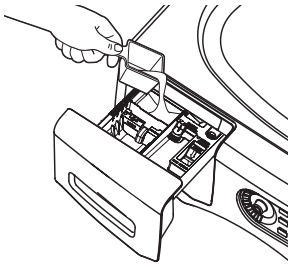


The Dispenser Drawer

Slowly open the dispenser drawer by pulling it out until it stops.

After adding laundry products, slowly close the dispenser drawer. Closing the drawer too quickly could result in early dispensing of the bleach, fabric softener or detergent.

There may be water in the dispenser drawer at the end of the cycle. This is a result of the flushing/siphoning action and is part of the normal operation of the washer.



The Prewash Compartment

(on some models)

- Only use the Prewash Compartment if selecting the *Prewash* cycle for heavily soiled clothes. Add measured detergent or prewash additive to the back left prewash compartment of the dispenser drawer.
- Detergent or prewash additive is flushed from the dispenser in the prewash cycle (if selected).

NOTE: Liquid detergent will drain into the washer drum as it is added.

- Detergent usage may need to be adjusted for water temperature, water hardness, size and soil level of the load. Avoid using too much detergent in the washer as it can lead to over suds-ing and detergent residue being left on the clothes.

The Detergent Compartment

- High-efficiency detergent is required for this washer. Use the detergent manufacturer's recommended amount.
- Add measured detergent to the front left detergent compartment of the dispenser drawer.
- Detergent is flushed from the dispenser at the beginning of the wash cycle. Either powdered or liquid detergent can be used.

- Detergent usage may need to be adjusted for water temperature, water hardness, size and soil level of the load. Avoid using too much detergent in the washer as it can lead to over-sudsing and detergent residue being left on the clothes.
- Using more detergent than the recommended quantity can cause residue buildup on the washer.

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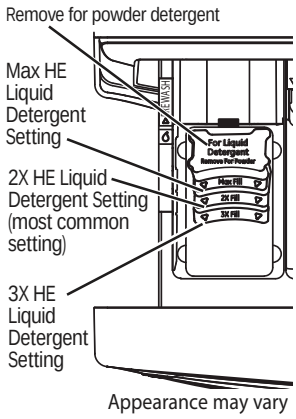
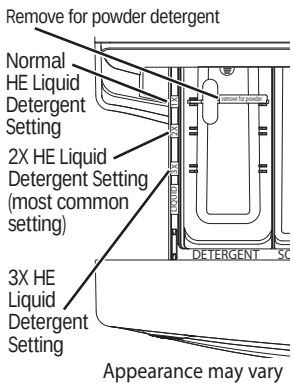


On models with a removable detergent cup

- Powder Detergent: Remove the liquid detergent cup and place it in a safe location outside of the washer. Follow the detergent manufacturer's instructions when measuring the amount of powder to use.
- Liquid Detergent: Locate the concentration of the detergent on the bottle. Do not fill above the Max Fill line in the detergent cup for the detergent concentration type.



On models with a selection insert

The detergent selection insert must be placed in the detergent compartment in a specific position according to what type of detergent is being used.

Powder Detergent: Remove the detergent selection insert and place it in a safe location outside of the washer.

Liquid Detergent: Adjust the insert according to the type of Liquid Detergent being used. The Icons on the side of the detergent compartment must line up on the center when the insert is in position.

NOTE: Not all models have the 2x and 3x detergent settings. Some have only regular HE (high efficiency) detergent settings. Reduce the amount of detergent for 2x or 3x detergent per bottle instructions.

Move the insert by pulling it up and replace it by sliding it down between either the rear or front detergent compartment molded rails, as desired, for liquid detergent. Remove for powder detergent.

Liquid detergent may seep under the insert prior to the start of the cycle. This is normal and will not affect the wash performance.

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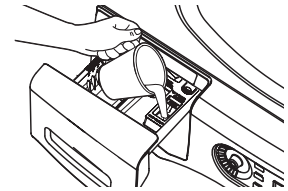
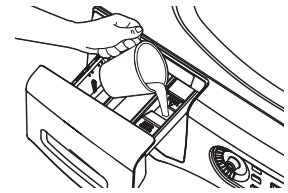
On some models:



On some models:



The Liquid Bleach Compartment

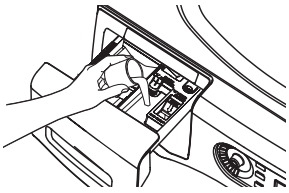
IMPORTANT: The bleach compartment position varies by model. Be sure to identify the correct compartment for bleach before using.

If desired, measure out the recommended amount of liquid bleach, not to exceed 1/3 cup (80 ml), and pour into the right compartment labeled “LIQUID BLEACH”.

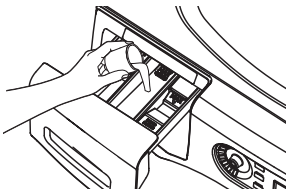
Do not exceed the maximum fill line. Overfilling can cause early dispensing of the bleach which could result in damaged clothes.

NOTE: Do not use powdered bleach in the dispenser.

On some models:



On some models:



The Fabric Softener Compartment

IMPORTANT: The fabric softener compartment position varies by model. Be sure to identify the correct compartment for fabric softener before using.

If desired, pour the recommended amount of liquid fabric softener into the compartment labeled “FABRIC SOFTENER”.

Use only liquid fabric softener in the dispenser.

Dilute with water to the maximum fill line.

Do not exceed the maximum fill line. Overfilling can cause early dispensing of the fabric softener which could stain clothes.

NOTE: Do not pour fabric softener directly on the wash load.

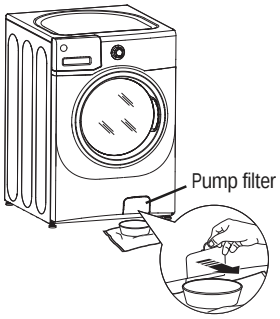
Loading the Washer

The wash drum may be fully loaded with loosely added items. Do not wash garments containing flammable materials (waxes, cleaning fluids, etc.).

Loading Examples

WORKWEAR	LINENS	MIXED LOAD	DELICATES*	SPEED WASH (2–4 GARMENTS)
4 Jeans 5 Work Wear Shirts 5 Work Wear Pants	2 Bath Sheets 10 Bath Towels/12 Washcloths 7 Hand Towels/2 Terrycloth Bath Mats OR 2 Flat Queen-Sized Sheets 2 Fitted Queen-Sized Sheets 4 Pillowcases	4 Pillowcases 2 Hand Towels 2 Flat Sheets/2 Fitted Sheets 2 Bath Towels/4 Washcloths OR 6 Shirts (Men’s or Women’s) 4 Pair Pants (Khakis or Twills) 5 T-shirts 7 Pairs of Boxers 4 Pairs of Shorts OR 6 T-shirts 4 Pairs of Sweatpants 4 Sweatshirts 2 Hoodies 7 Pairs of Socks	7 Bras 7 panties 3 Slips 2 Camisoles 4 Nightgowns *Using a nylon mesh bag for small items is recommended.	2 Casual Wear Work Shirts 1 Pair Casual Wear Work Pants OR 3 Soccer Uniforms

(*Continued next page*)



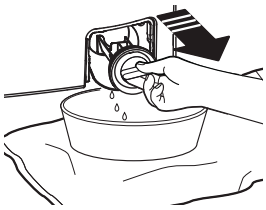
Cleaning the Pump Filter

Due to the nature of the front-load washer, it is sometimes possible for small articles to pass to the pump. The washer has a filter to capture lost items so they are not dumped to the drain. To retrieve lost items, clean out the pump filter.

1. Using a small flathead screwdriver or coin, open the access door.
2. Place a shallow pan or dish under the pump access door and towels on the floor in front of the washer to protect the floor. It is normal to catch about a quart of water when the filter is removed.

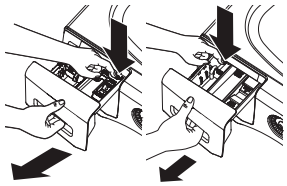
NOTE: If there is water in the basket when the pump filter is cleaned, it will drain out and a larger pan or dish may be necessary.

3. Pull down the pour spout.
4. Turn the pump filter counterclockwise and remove the filter slowly, controlling the flow of the draining water.

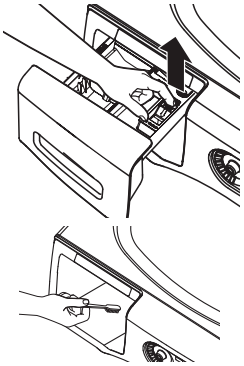


5. Clean the debris from the filter.
6. Replace the filter and turn clockwise. Tighten securely.
7. Flip up the pour spout.
8. Close the access door by hooking the bottom tabs first, then rotating the access door shut.

Tab on back right or left depending on model



Lock tab is visible only after drawer has been pulled open

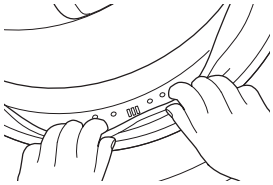


Dispenser Drawer Area

Detergent and fabric softener may build up in the dispenser drawer. Residue should be removed once or twice a month.

- Remove the drawer by first pulling it out until it stops. Then reach back into the left or right rear corner (depending on model) of the drawer cavity and press down firmly on the lock tab, pulling out the drawer.
- Remove the inserts from the bleach and fabric softener compartments and the detergent insert. Rinse the inserts and the drawer with very warm water to remove traces of accumulated laundry products.
- To clean the drawer opening, use a small brush to clean the recess.
- Remove all residue from the upper and lower parts of the recess.
- Return inserts to the proper compartments. Replace the dispenser drawer.
- To reduce buildup in the Dispenser Drawer area: Use only **HE High-Efficiency detergent.**

(*Continued next page*)



Door Gasket

Open the washer door. Using both hands, press down the door gasket. Remove any foreign objects if found trapped inside the gasket. Make sure there is nothing blocking the holes behind the gasket.

While holding down the door gasket, inspect the interior gasket by pulling it down with fingers. Remove any foreign objects if found trapped inside this gasket. Make sure there is nothing blocking the holes behind the gasket.

When finished cleaning the door gasket, remove hands and the gasket will return to the operating position.

Pedestal Installation (Washer and Dryer)

Optional 12 inch high storage drawer pedestals with dividers are available to provide convenience and extra storage space for detergent, dryer sheets and other cleaning supplies. The pedestal installation kit includes 4 support pads, 4 mounting screws, and 4 leveling legs with locknuts.

Kit Contents

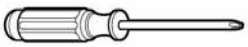
4 Support Pads

4 Mounting Screws

4 Leveling Legs with Locknuts

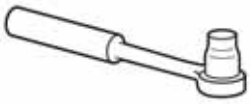
Tools Needed

Phillips head Screwdriver



9/16" Open End Wrench
or Adjustable Wrench

8 mm Socket Wrench



WARNING: Due to the size and weight of the washer or dryer, and to reduce the risk of personal injury or damage, two people are required for proper installation.

NOTE:

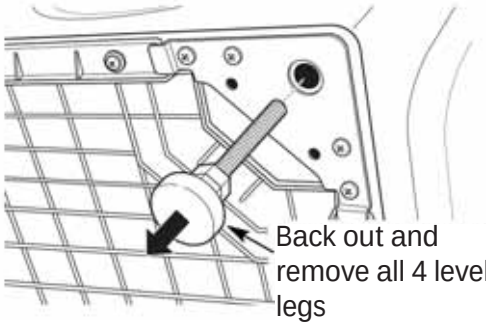
DO NOT remove washer shipping bolts prior to pedestal installation. Shipping bolts MUST be reinstalled, if previously removed.

Care should always be taken when laying the washer or dryer on its side to prevent component damage.

Do not lay the washer or dryer on its back. Use a pad or protective surface when laying the washer or dryer on its side.

Pedestal Installation

1. Lay the washer or dryer on its side.
2. Remove the 4 leveling legs.



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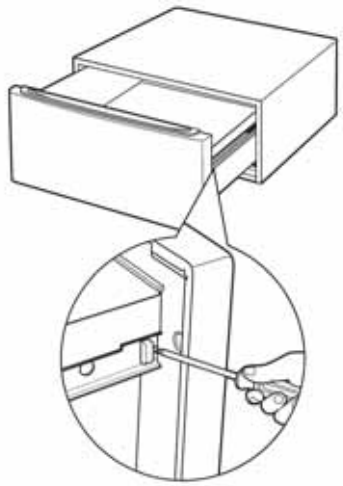
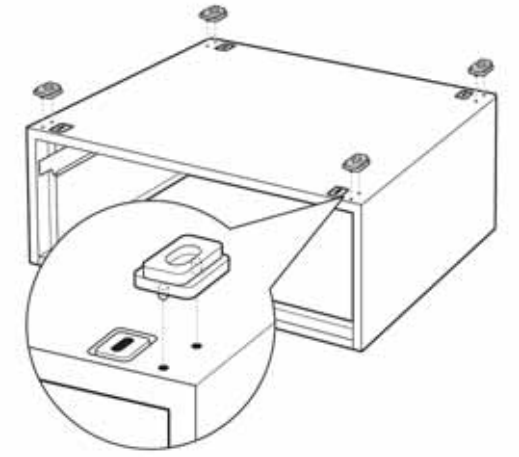
3. Pull the drawer out to its stop position.
4. Remove the screws from the drawer slides.
5. Slide the drawer out of the base and set it aside.

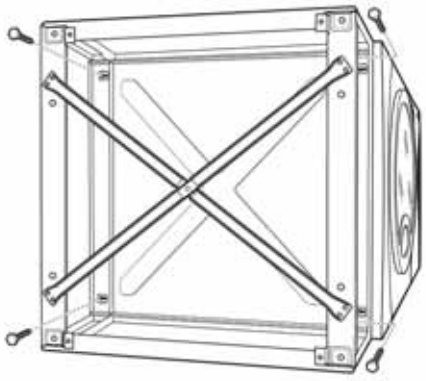


NOTE: The support pads should be installed on the dryer only. DO NOT INSTALL THE PADS ON THE WASHER PEDESTAL.

6. Install a support pad at each top corner of the pedestal. Ensure that both protrusions on each pad are inserted in the holes on the top of the pedestal.

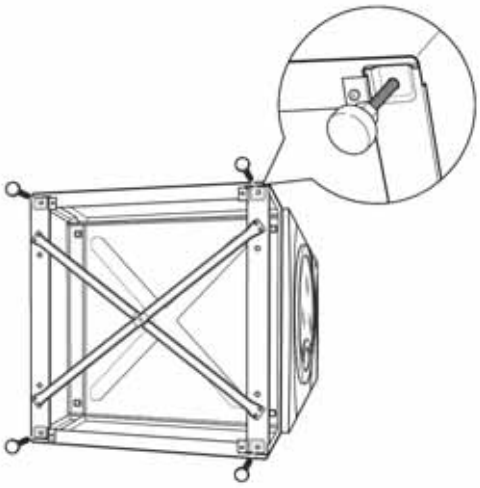


7. Place the pedestal against the bottom of the washer or dryer. Ensure that the drawer front is at the front of the washer or dryer.
8. Align the holes in the pedestal with the holes in the bottom of the washer or dryer base.
9. Use a Phillips head screwdriver to install the 4 (8 mm) bolts through the pedestal and into the unit. DO NOT tighten the bolts.
10. Align the pedestal with the unit. Use an 8 mm socket wrench to securely tighten the bolts.



11. Screw locknuts onto the supplied leveling legs. Turn the nuts toward the bottom and against the rubber part of the leg.

12. Install the leveling legs, with locknuts, in each corner support. Screw the legs all the way into the pedestal. Do not tighten.

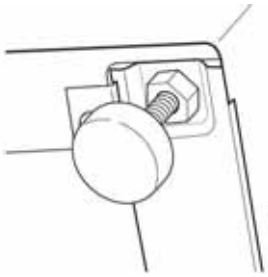


13. Stand the washer or dryer upright. Move it close to its final location.

14. Make sure that the washer or dryer is level by placing a level on top. Check side to side and front to back.

15. Use an open end or adjustable wrench to adjust the legs in or out. Tighten the locknuts against the bottom of the pedestal.

NOTE: To minimize vibration, the locknuts must be tight.

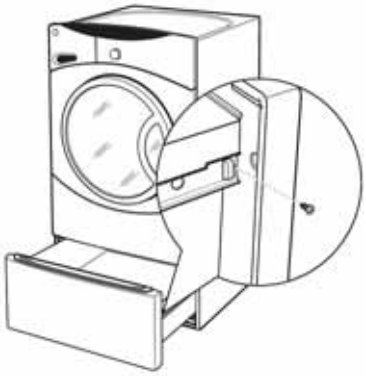


16. Ensure that the slides are closed, then slide the drawer into the opening.

17. Align the drawer supports to the slides on each side.

18. Reinstall the original screws in each drawer slide.

NOTE: The drawer should slide smoothly when pushed closed.



19. Remove the 4 shipping screws from the back of the washer.

NOTE: Refer to the washer or dryer installation instructions to complete the installation.

Stacking Instructions

The GE front load washer is designed to allow certain models of the GE dryer to be placed on top (stacking). Dryer models that currently qualify for stacking are:

- DBVH512
- DCVH515
- DHDVH52

The parts and instructions necessary to convert the separate units to a stack unit are included with the washer installation parts.

NOTE: The stacking parts and instructions are NOT included with the GE dryers listed above, but can be ordered separately. (Part #: WE25X10018)

NOTE: Reverse the dryer door swing (if desired) BEFORE stacking. The washer door swing is NOT reversible.

⚠ WARNING!

- Make sure the dryer is unplugged.
- More than 2 people are recommended to safely lift the dryer into position.
- Avoid damage to the existing utility services.
- DO NOT place the washer on top of the dryer.
- Stacking of a gas dryer is NOT permitted in a mobile home or a manufactured home.

Location Requirements

When installed in a location other than an alcove or closet, the minimal clearances to combustible surfaces and for air opening are: 0 inches on both sides, and 1 inch at the rear.

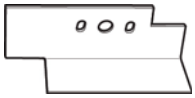
NOTE: If the dryer is approved for installation in an alcove or a closet, it will be stated on a label on the back.

When installed in an alcove or closet:

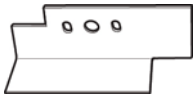
- Minimum clearance between dryer cabinet and adjacent walls or other surfaces is 0 inches either side, and 3 inches front and rear.
- Minimum vertical space from floor to overhead cabinets, ceiling, etc. is 43 inches without pedestal, 55 inches with pedestal, and 84 inches stacked. Closet doors must be louvered or otherwise ventilated and must contain a minimum of 120 square inches of open area, equally distributed.
- The dryer MUST be vented to the outdoors. (Refer to dryer installation instructions for details.)

Kit Contents

Right Bracket



Left Bracket



4 Rubber Pads

4 #12 x 1" Screws

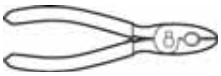
4 #8 x ½" Screws

Tools Needed

Phillips Screwdriver

Open End Wrench

Pliers



Gloves

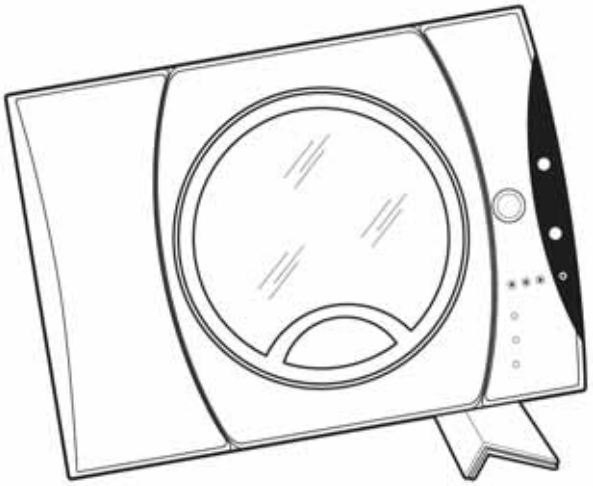
Level

(*Continued next page*)

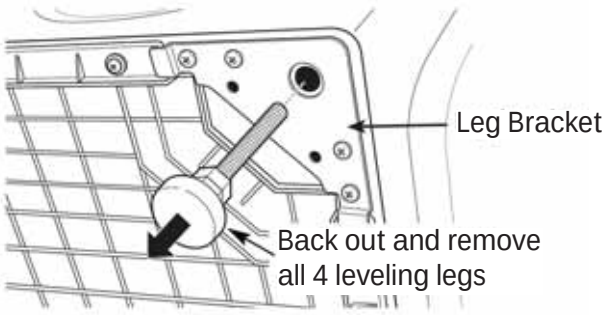
To stack the dryer:

Caution: Do not lay the dryer on its back. Use the packing material or a protective surface when laying dryer on its side.

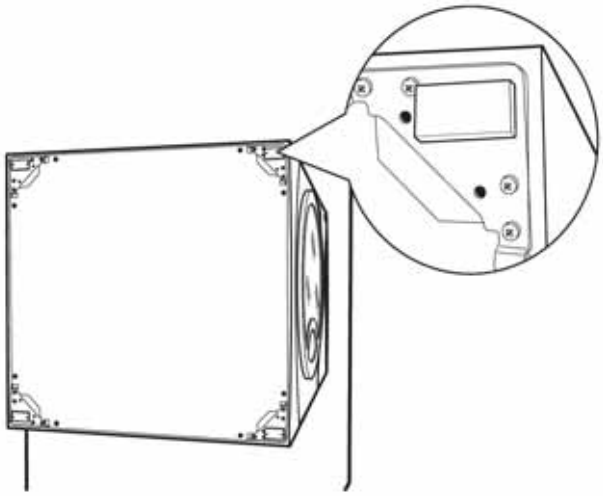
1. Carefully lay the dryer on its side.



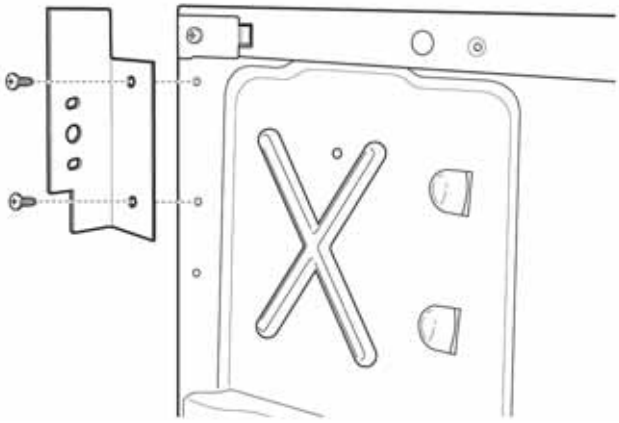
2. Use an open end wrench or pliers to remove the 4 dryer leveling legs from the leg brackets.



3. Remove the adhesive backing and firmly place the 4 rubber pads over the leg brackets.



4. Align the holes in the left bracket with the holes in the bottom left corner of the dryer. Attach the bracket using 2 (#12 x 1 in.) Phillips head screws.



5. Align the holes in the right bracket with the holes in the bottom right corner of the dryer. Attach the bracket using 2 (#12 x 1 in.) Phillips head screws.

(*Continued next page*)

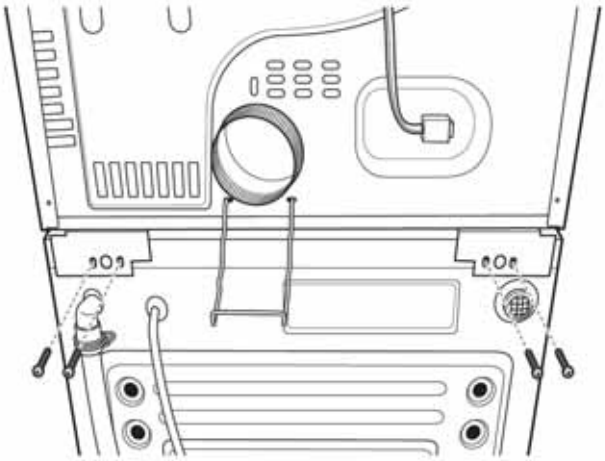
6. Set the dryer upright using packing material or a protective surface that ensures the brackets do not damage the floor.

7. Place and level the washer in the approximate location. (Refer to washer installation instructions for details.)

Caution: Protect the washer control panel with cardboard or other protection to prevent damage caused by contact with the dryer brackets.

8. Lift the dryer high enough to clear the washer control panel and place the dryer on top of the washer.

9. Align the holes in the brackets with the holes in the back of the washer. Attach the brackets to the washer using 4 (#8 x 1/2 in.) Phillips head screws.



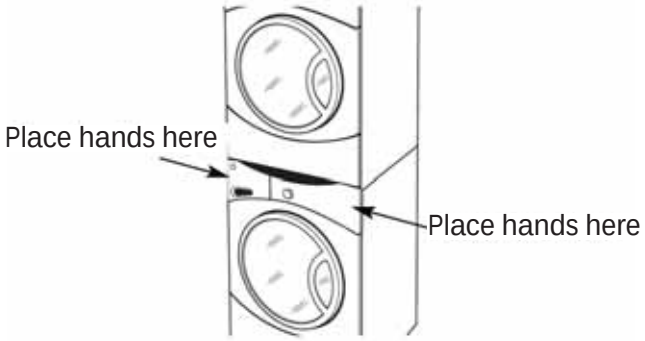
⚠ WARNING!

Do not push on the dryer after it is stacked on the washer. Pushing on the dryer may result in pinched fingers.

Caution: Use felt pads or other sliding device to assist moving and to protect flooring.

NOTE: Ensure that the washer and the dryer are in compliance with their respective installation instructions.

10. Carefully slide or walk the stacked washer and dryer into place.



Operation Overview

Basic Wash Cycle

NOTE: See Component Locator Views for identification and location of washer components. Cycles, temperatures and features may vary depending on the model.

After a load is placed in the wash basket, the user opens the dispenser drawer and positions the detergent selector for the type of detergent to be used.

Detergent is added to the detergent compartment.

Detergent is added to the prewash compartment only if the prewash cycle is selected.

NOTE: The prewash compartment is only flushed with water when the PRE WASH option is selected on the control.

If desired, add a measured amount (1/3 cup or less) of bleach into the bleach compartment.

If desired, add the recommended amount of fabric softener in the fabric softener compartment and dilute with water to the maximum fill line.

After adding laundry products, slowly close the dispenser drawer.

The user presses the POWER button to activate the display. If the display is active, press the POWER button to put the washer into standby mode.

Rotate the cycle knob to the desired wash setting. When selecting Whites, Colors/Normal, Active Wear, or Delicates cycles, the following control default settings can be changed:

- EXTRA RINSE
- PRE WASH
- SOIL LEVEL
- SPIN SPEED
- WASH TEMP

Select EXTRA RINSE and PRE WASH options. Use the SIGNAL button to change the volume level of the end of cycle signal.

Select the SOIL LEVEL to increase or decrease wash time needed to remove different amounts of soil.

Select the SPIN SPEED to change the final spin speed of the cycles. Follow the fabric manufacturer's care label when selecting spin speed.

Select the WASH TEMP to adjust the proper water temperature for the wash cycle. Follow the fabric manufacturer's care label when selecting wash temperature.

Press START/PAUSE to start the wash cycle. Each time the washer starts, a wake up routine is initiated:

1. The door locks.
2. The wash basket briefly tumbles in both directions.
3. The door unlocks.
4. The door locks.
5. The fill cycle begins.

Water Fill

The washer automatically fills before tumbling, and maintains the proper fill level using a programmed adaptive fill. The machine will not tumble while filling.

Wash Water Temperature

The first 10 seconds of fill is tap cold water only. If needed, the control board will cycle the water valves (water tempering) to achieve the target wash water temperature selected. Water tempering only occurs during the main wash cycle.

Tap Cold:

- Cold water valve energized.
- Tap cold never involves water tempering.
- Water temperature determined by supply temperature.
- All fills except main wash are tap cold.

(*Continued next page*)

Cold:

- Cold water valve energized.
- Cold selection is tempered by default for main wash.
- Cold can be tempered by cycling of hot water valve to achieve target temperature of 70°F (21°C).

Warm:

- Hot and cold water valves energized.
- Warm can be tempered by cycling of hot and cold valves to achieve target temperature of 86°F (30°C).
- Warm selection is tempered by default for main wash.

Hot:

- Hot water valve energized.
- Hot can be tempered by cycling of cold water valve to achieve target temperature of 110°F (43°C).
- Hot selection is tempered by default main wash.

Sanitize:

- Hot water valve energized.
- Sanitize can be tempered by cycling of cold water valve, or heater operation, to achieve target temperature of 160°F (71°C).

Tumble Wash

Wash routines are programmed by cycle. The only adjustment to the tumble routine is through cycle selection.

The basket rotates clockwise for a predetermined period of time at a predetermined speed. The basket pauses for a predetermined period of time. The basket rotates counterclockwise for a predetermined period of time at a predetermined speed. The length of tumble wash time is adaptive to the soil level programmed into the machine at the start of the cycle.

Spin

The spin is designed to extract as much water and detergent as possible without harming fabrics. Speeds can be as slow as 90 rpm (out of balance default) to as high as 1000 rpm.

The available selection of spin speeds is controlled by cycle selection.

For example:

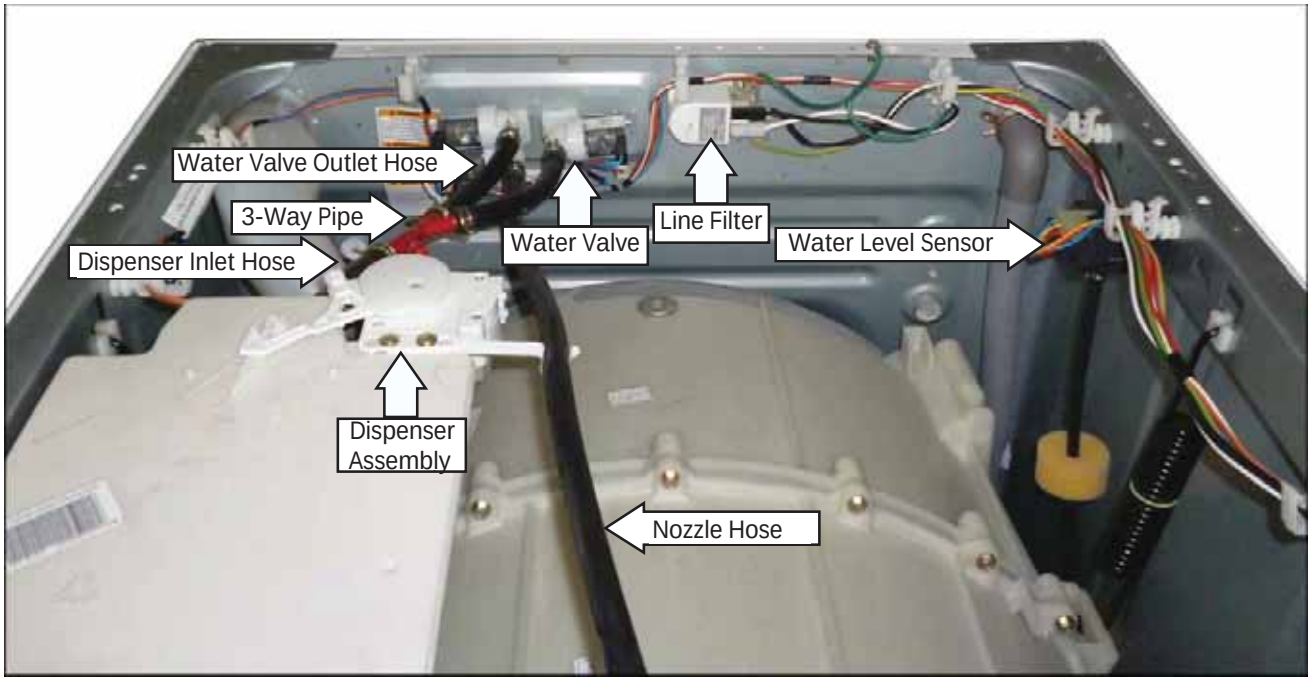
Spin Speed	Quick Wash	Delicates
Extra High	1300 rpm	Not available
High	1150 rpm	1150 rpm
Med	1050 rpm	1050 rpm
Low	410 rpm	410 rpm

Selecting a spin speed modifies the final spin only and must be made before the final spin takes place. The length of time required to achieve spin rpm is monitored by the control via the motor sensor. With a balanced load, if the selected spin speed cannot be achieved, the washer will default to the highest speed attained and will increase the spin time.

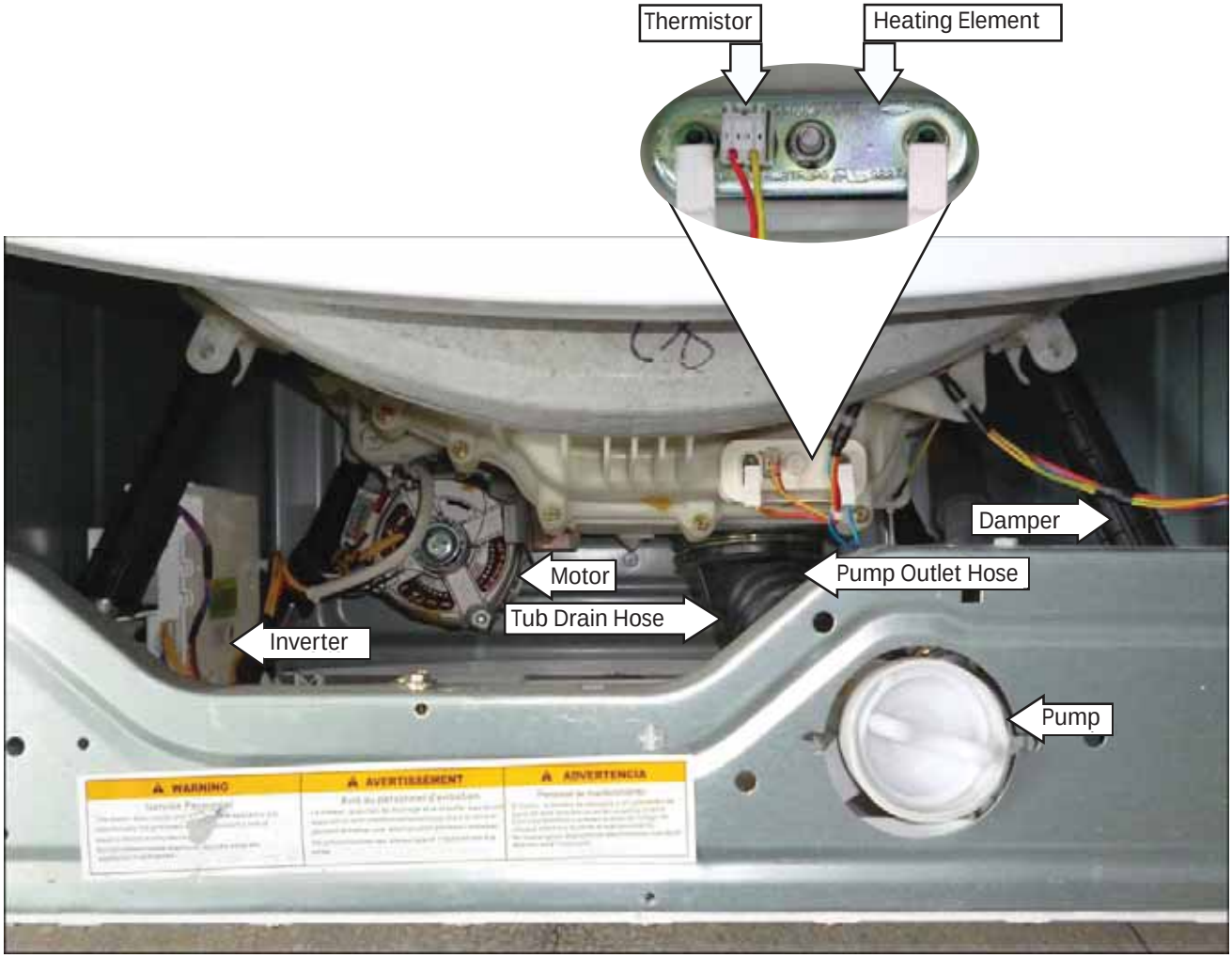
Off-balance load protection is programmed into the control board. If speed is not achieved, the spin routine halts. The washer tumbles to redistribute the load and attempts to spin again. After 5 attempts, if an off-balance load remains detected, spin speed defaults to the highest speed attained or 90 rpm (whichever is greater) for the remainder of the cycle.

Component Locator Views

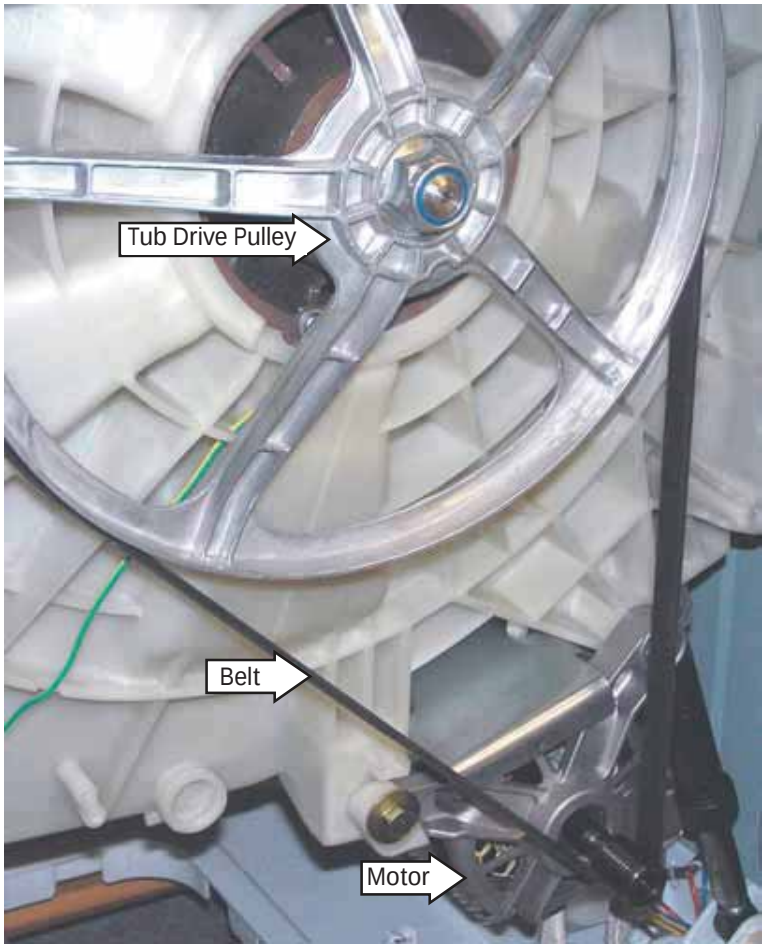
Top View



Front View

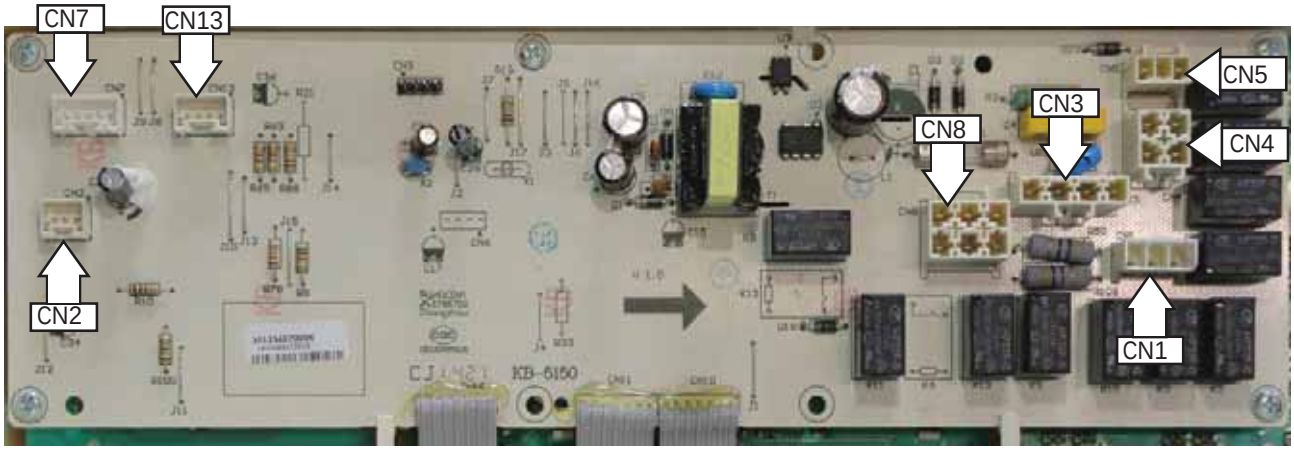


Component Locator Views (Continued)



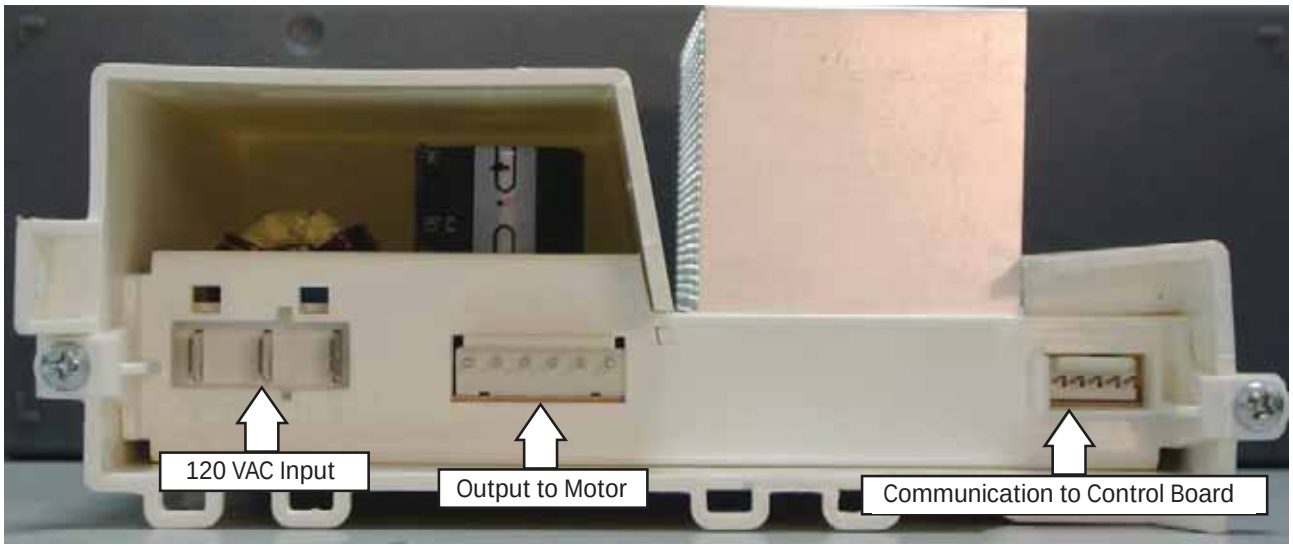
Control and Inverter Board Connections

Control Board



CN1	Hot and cold water valves and dispenser motor
CN2	Water level sensor
CN3	Door lock control and line filter
CN4	Neutral output to inverter and water valves
CN5	Door lock output and line output to heater
CN7	Inverter communication
CN8	Line output to inverter and pump, and cold water valve 2, and neutral output to heater
CN13	Dispenser switch and thermistor

Inverter Board



Washer Components

Top Panel

WARNING: Sharp edges may be exposed when servicing washer. Use caution to avoid injury and wear Kevlar gloves or equivalent protection.

NOTE: Combined Phillips head/square-drive recess screws can be utilized throughout this appliance. Either Phillips or square-drive screwdrivers can be used to extract or install these screws.

Removal of the top panel provides access to the control panel, dispenser, water valve, water level control, and line filter. The top panel is held in place by a top cover and 3 screws on the back.

Top Panel Removal

1. Remove the 3 Phillips head screws that attach the top cover, then pull the cover rearward.

NOTE: It may be helpful to place a putty knife along the top seam between the cover and control panel, then tap lightly rearward.

Rear View

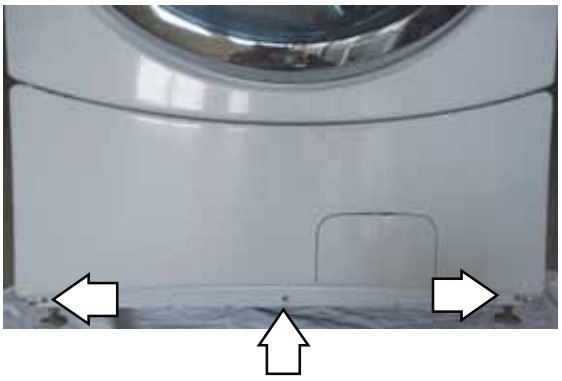
2. Slide the top panel rearward 1 inch then lift the panel.

Service Panel

Removal of the service panel provides access to the pump cleanout, pump, tub drain hose, heater assembly, inverter, wire junction box, front dampers, and the door lock release ring.

Service Panel Removal

1. Remove the 3 Phillips head screws that hold the service panel to the cabinet.
2. Pull the service panel down.

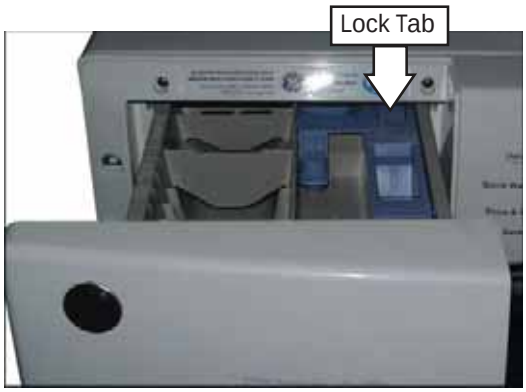


Control Panel

The control panel is held in place with Phillips head screws and tabs.

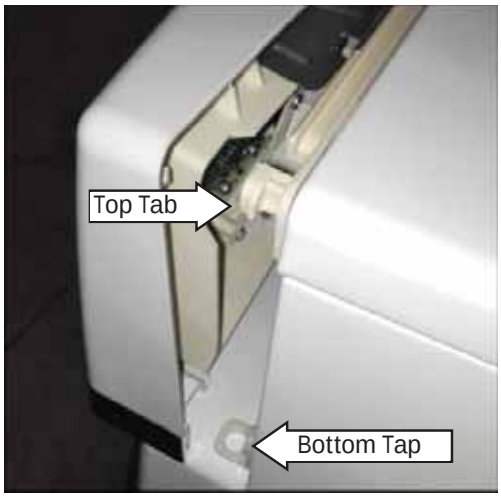
Control Panel Assembly Removal For 1600, 1700, 1705, 400 and 450:

1. Pull the dispenser out to the stop position. Press down on the lock tab. Pull the dispenser out. (Note: 1600 use same detergent box as 1100.)



2. Remove all 4 Phillips head screws from the control panel dispenser recess.

3. Lift the panel to disengage from top and bottom tabs that hold the right of the panel in place.



4. Disconnect the wire harnesses from the control panel.

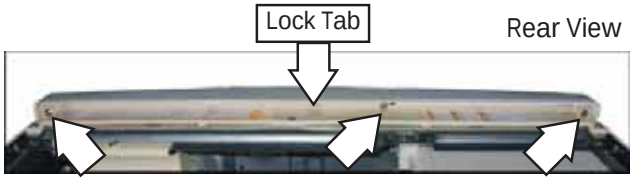
Control Panel Assembly Removal For 1100, 1200 and 1300:

1. Remove the top panel. (See **Top Panel** section.)

2. Pull the dispenser out to the stop position. Press down on the lock tab. Pull the dispenser out.

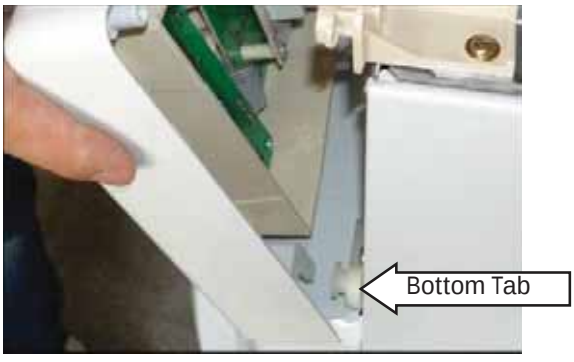
3. Remove the 2 Phillips head screws from the control panel dispenser recess.

4. Remove the 3 Phillips head screws that attach the top of the control panel to the control panel cover.



5. Lift the top edge of the panel to disengage the lock tab that hold the top of the panel in place.

6. Lift the panel to disengage from the bottom tab that hold the right of the panel in place.



7. Disconnect the 9 wire harnesses from the control panel.

Control Board

The control board is mounted in a housing that is attached to the inside of the control panel. The control board and housing are replaced as an assembly. The control board assembly is held in place by Phillips head screws. The control board is programmed to recognize different modes of operation.

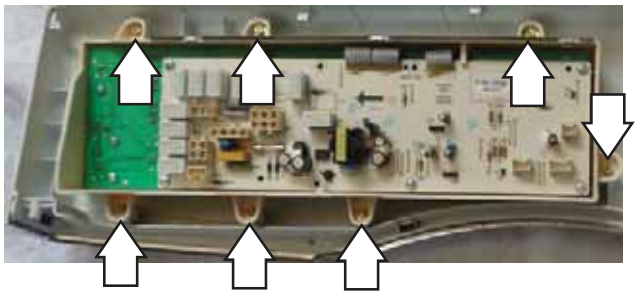
Mode Name	Description
Idle	No cycle is selected. All LEDs, 7-segment display on front panel, load selections and options are off. The door is unlocked. The control board is ready to take input from the user.
Standby	A cycle is selected with the appropriate load selections and options. LEDs and 7-segment display on front panel are on. The door is unlocked. The control board is ready to take user input to either modify cycle selections or start a selected cycle.
Run	The control board is executing the currently selected cycle. The door is locked.
Pause	The control is stopped by the user during the execution of a cycle. The LEDs and 7-segment display on the front panel stay on, all loads are turned off. The door is unlocked. The control board is ready to take user input to either modify, resume, or cancel the cycle.
End of Cycle	A cycle is completed. The LEDs and 7-segment display on the front panel stay on, all loads are turned off. The door is unlocked. The control board remains in this mode until the door is opened or after 2 hours have passed.
Fault	The control board detected a critical failure condition. The 7-segment display shows the fault code, all loads are turned off. The fault code can only be removed in the service test mode. (See the Service Test Mode section in this guide.)

Operation of the control board can be checked by using the Service Test Mode. (See the Service Test Mode section in this guide.)

Specific failures associated with the control board can initiate fault codes E56, E57 and E58. (See the Service Test Mode section in this guide.)

Control Board Assembly Removal

1. Remove the control panel. (See the **Wash Components**, **Control Panel** in this guide.)
2. Pull the cycle knob off.
3. Remove the Phillips head screws that hold the control board assembly to the control panel.



4. Remove the control board assembly from the control panel.

NOTE:

- 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.

Programming the Control Board

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 GFWN1100H PCB: Must select 1
   - For GFWH1200H PCB: Must select 2
   - For GFWN1300J PCB: Must select 1
   - For GFWN1600J PCB: Must select 1
   - For GFWS1700H (1705H) PCB: Must select 2
   - For GFW400SCK PCB: Must select 3
   - For GFW450SPK (450ssk) PCB: Must select 3
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.

Door Lock

The door lock contains a door switch and solenoid operated locking and unlocking mechanism. A release hook, located at the middle, allows for manual unlocking of the door.

The door locks when a cycle is entered (Wake-up routine) and during every cycle. The door unlocks at the completion of a cycle.

The door will not open when:

- The water level is higher than main wash level
- Water temperature is above 130°F (54°C)
- Wash basket is rotating

Specific failures associated with the door lock can initiate fault codes E60 through E64. (See the **Service Test Mode** section in this guide.)

The door lock is held to the front panel with 2 Phillips head screws. The door lock is accessed from the front of the washer when the right side of the gasket is partially pulled back.

Door Lock Removal

1. Remove the 2 Phillips head screws that hold the door lock to the front panel.

2. Use long-nose pliers to grasp the wire loop at the spring location and expand it to clear the gasket.

3. Remove the spring and wire from the gasket.
4. Pull the right side of the gasket away from the front panel.
5. Pull the door lock to the opening and remove the wire harness.

NOTE: The door latch is solenoid activated. It can remain locked after power is removed.

To manually unlock door:

1. Disconnect the washer from electrical supply.

WARNING: To avoid injury, ensure all mechanical movement has stopped.

2. Remove the service panel. (See the **Washer Components**, **Service Panel** section in this guide.)
3. Reach behind and up the right side of the front panel, push the release hook down, then open the door.

Door Strike

Door Strike Removal

1. Open the door.
2. Remove the 2 Phillips head screws that hold the door strike to the door frame cover.

3. Remove the door strike.

NOTE: The door strike position on the door can be horizontally adjusted 1/8 inch. Adjust the position of the door strike for best door closure.

Front Panel

The front panel is hung on 2 hooks attached to the cabinet and held in place with 4 Phillips head screws. A gasket provides a watertight seal between the front panel and outer tub. The front of the gasket is secured to the front panel flange by a spring and wire located in the fold of the gasket. The door lock and wiring is attached to the front panel.

Front Panel Removal

1. Remove the control panel. (See the **Washer Components**, **Control Panel** section in this guide.)
2. Remove the service panel. (See the **Washer Components**, **Service Panel** section in this guide.)
3. Open the door. Remove the 2 Phillips head screws that hold the door lock to the front panel. (See the **Washer Components**, **Door Lock** section in this guide.)
4. Remove the spring and wire from the gasket. (See the **Washer Components**, **Door Lock** section in this guide.)
5. Position the gasket behind the front panel door opening. Close the door.
6. Remove the 4 Phillips head screws that attach the front panel to the cabinet.

7. Lift up then remove the front panel from the 2 hooks.

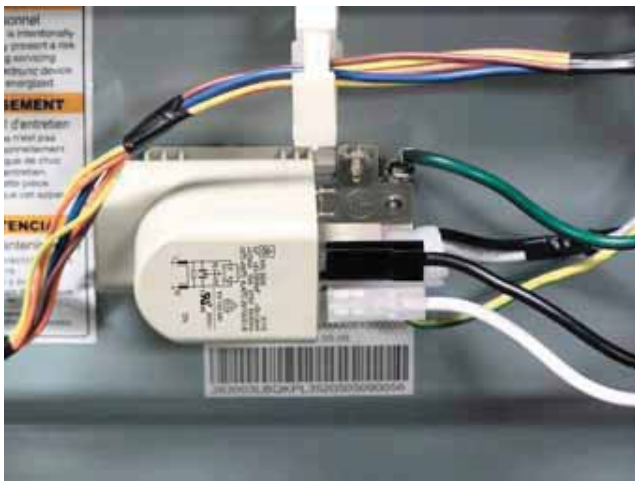
Line Filter

The line filter helps to smooth out any fluctuations in voltage, protecting the control board and providing more reliable operation. The line filter is installed on the interior side of the rear panel, and is located left of the water valve.

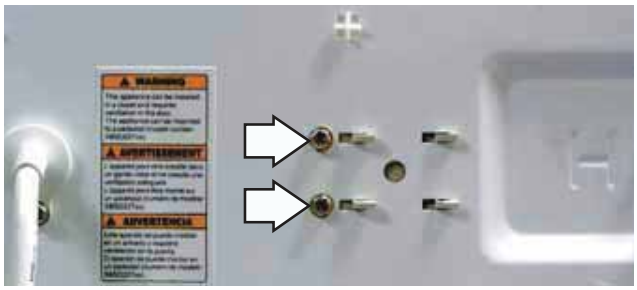
To check the line filter, look for the outer surface to be burnt by heat or a power surge. The filter resistance should be approximately 0 ohms between the black (top) wire terminals and 0 ohms between the white (bottom) wire terminals.

Line Filter Removal

1. Remove the single black (top) and single white (bottom) wires.
2. Disconnect the wire harness by pressing the tab and pulling outward.
3. Press the locking tab and remove the ground wire.



4. Remove the 2 (7 mm) hex head screws that hold the filter to the frame.

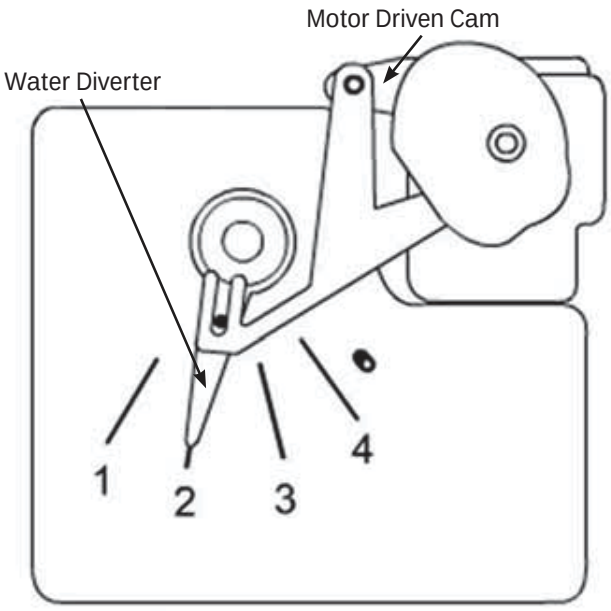


5. Move the filter to the right.

Dispenser Assembly With Motor Driven Cam

The dispenser assembly provides automatic dispensing of detergent, bleach, and fabric softener as long as the user fills the compartments prior to starting the washer.

The products added to the dispenser are diluted with water before they are dispensed into the wash tub. This is accomplished by a water diverter that sprays a controlled jet of water into the proper compartment at the correct time. The water diverter movement is provided by a motor driven cam located on the dispenser tank. The diverter motor and water valve are operated by the control board. At the start of a cycle, after the wake-up routine is completed, the dispenser always moves into position before fill takes place.



Dispenser Tank

Position	Dispenser Function
1	Pre Wash
2	Wash
3	Fabric Softener
4	Bleach

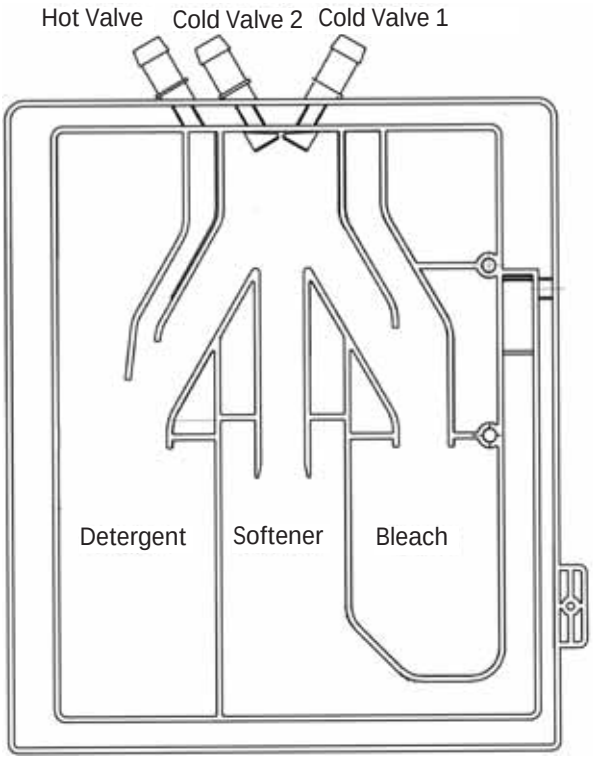
Operation of the dispenser can be checked by using service test mode t12. (See Service Test Mode.)

Specific failures associated with the dispenser can initiate fault codes E38 and E39. (See the Service Test Mode section in this guide.)

Caution: When testing the dispenser motor, DO NOT remove the wiring harness from the dispenser motor unless replacing the motor assembly. The motor assembly has a special locking connector and the wiring harness will not stay reconnected if removed and reinstalled on the same motor.

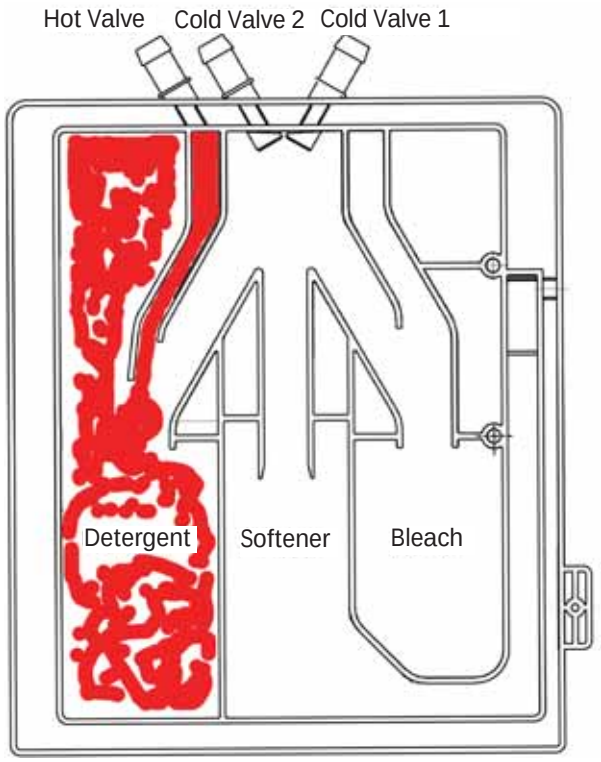
Dispenser Assembly Without Motor Driven Cam

Models without a motor driven cam water diverter utilize the water valve. Depending on where the washer is in its cycle, certain water valves will open at precise times to flush the dispenser box compartments.

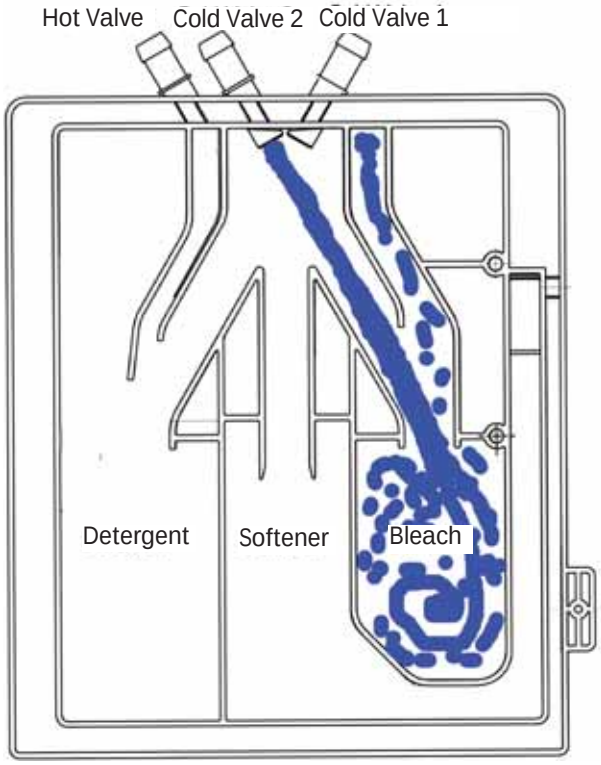


How it dispenses is as follows:

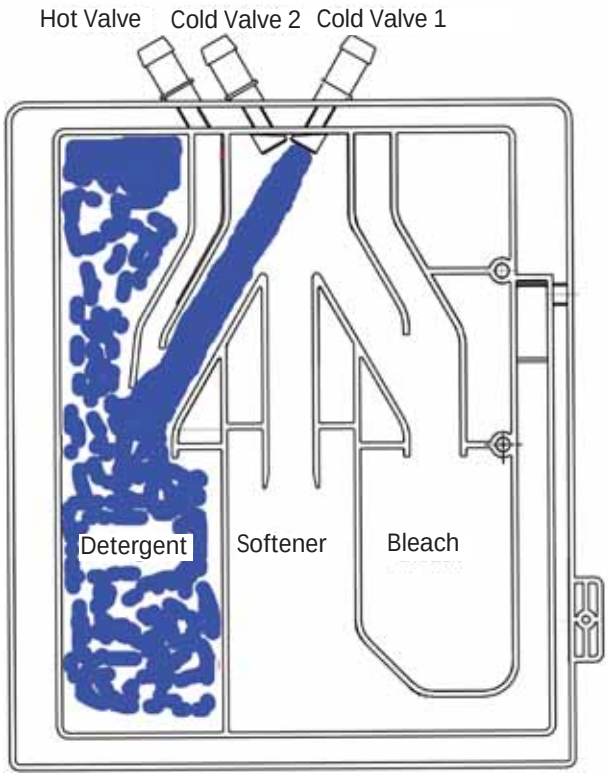
- **Hot valve open, water fills from Detergent box.**



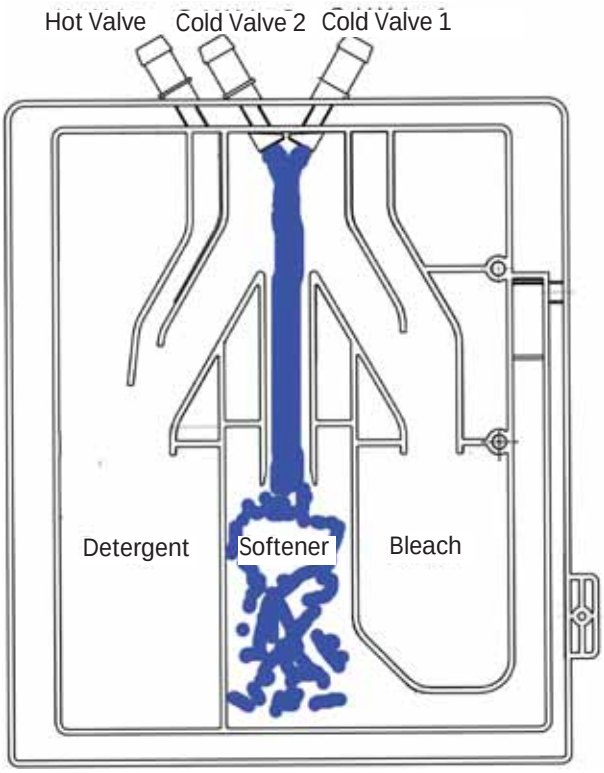
- **Cold valve 2 open, water fills from Bleach box.**



- **Cold valve 1 open, water fills from Detergent box.**



- Cold valve 1 and Cold valve 2 open together, **water fills from Softener box.**



Dispenser Assembly Removal

1. Remove the top panel and control panels. (See the **Washer Components**, **Top Panel** and **Control Panel** sections in this guide.)

2. Remove the inlet and the tub vent hoses from the dispenser:

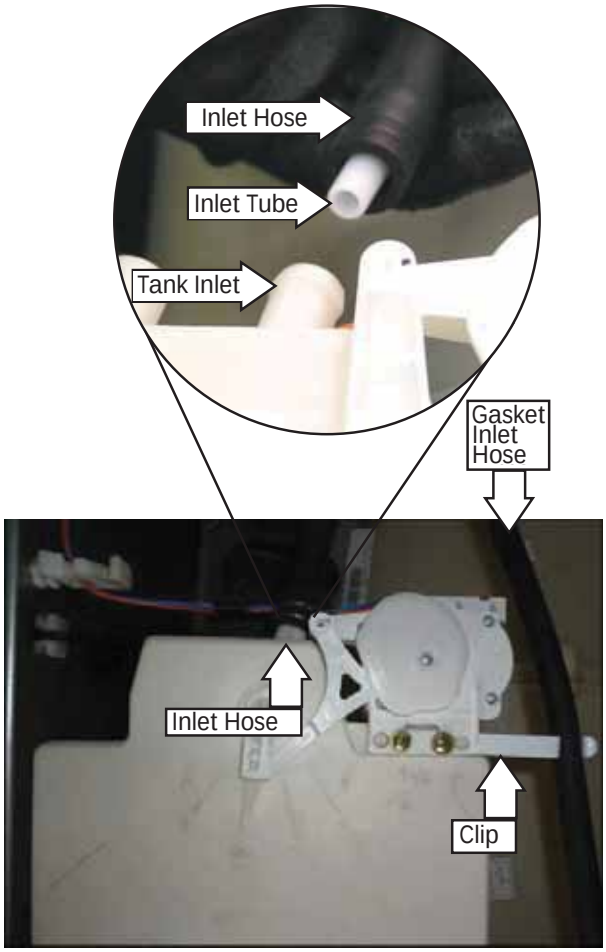
   NOTE: The inlet and the dispenser vent hoses are difficult to remove.

   a. Squeeze each clamp and slide it back.

   b. Carefully break each hose loose by inserting a small flat-blade screwdriver under the hose to break the seal.

   c. Remove the hoses.

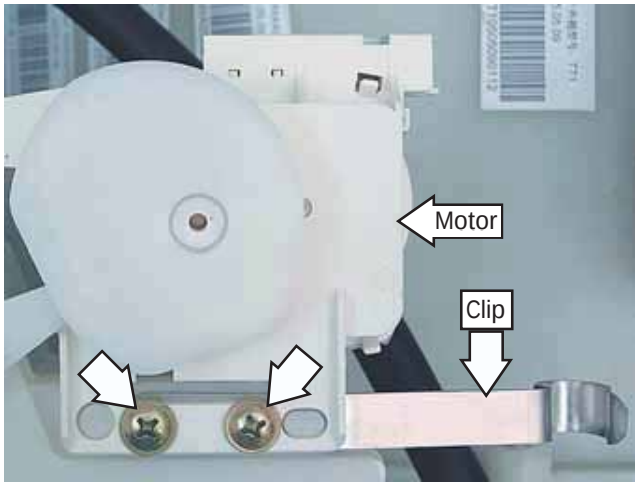
NOTE: An inlet tube is placed between the inlet hose and the dispenser tank. The inlet tube provides proper water pressure to the dispenser and nozzle. When removing the inlet hose, the inlet tube may remain in the hose. Ensure the inlet tube is fully inserted into the tank inlet upon reassembly.



Caution: A small retainer for the dispenser motor wiring, located underneath the unused inlet, is fragile. To avoid breakage, use minimal outward pressure when releasing wiring.

3. Release the dispenser motor wiring from the retainer.

4. Remove the 2 Phillips head screws that attach the motor and clip to the dispenser tank. Place the motor and clip aside.



5. Remove the 2 Phillips head screws that hold the dispenser to the front bracket.

6. Remove the dispenser from the cabinet.

   Caution: The water inlet pipe is firmly attached to the dispenser tank. Care must be taken to avoid damage to the dispenser tank.

   NOTE: Ensure the dispenser guide pin is inserted into the slot in the side of the cabinet left side top brace.

7. Remove the water inlet pipe by twisting and pulling outward.

Dispenser Motor

The dispenser is operated by a 120 VAC, 60 HZ. motor. The dispenser motor receives commands from the control board and controls dispenser operation.

Operation of the dispenser motor can be checked by using the Service Test Mode t12. (See the Service Test Mode section in this guide.)

Specific failures associated with the dispenser motor can initiate fault codes E38 and E39. (See the Service Test Mode section in this guide.)

Dispenser Motor Removal

Access the dispenser assembly. (See the Washer Components, Dispenser Assembly sections in this guide.)

Caution: Lock tabs on the dispenser motor wiring harnesses are fragile. Tab breakage can occur if excessive release pressure is applied.

1. Disconnect the 2 wire harnesses from the dispenser motor.

NOTE: It can be helpful to insert a small flatbladed screwdriver (as shown) to remove the wire harnesses.

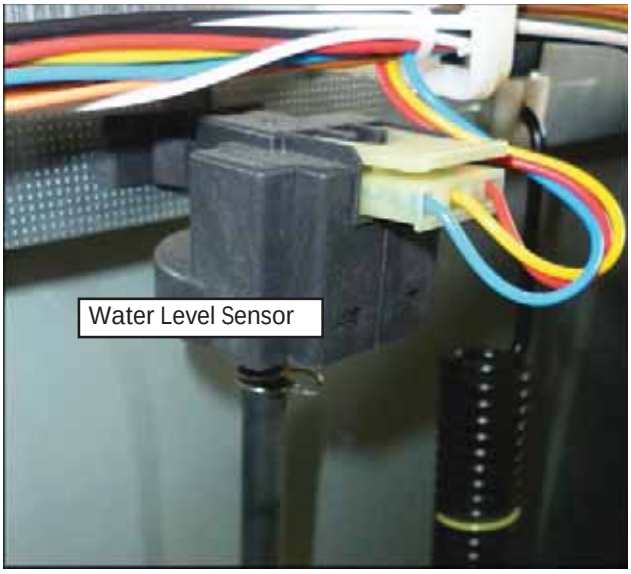
2. Remove the 2 Phillips head screws that attach the motor and gasket inlet hose clip to the dispenser tank. (See the Washer Components, Dispenser Assembly sections in this guide.)

3. Lift the dispenser motor vertically from the dispenser tank.

Water Level Sensor

The water level sensor is installed on the cabinet right side top brace. The water level sensor is connected by a hose to an air chamber attached to the bottom of the outer tub. The water level control consists of one internal sensor that monitor water level conditions.

- When the water level rises in the outer tub, air is trapped in the air chamber.
- As the water level rises, the air pressure in the air chamber increases.
- The increased pressure operates the water sensor.
- The washer has overflow protection and will automatically pump out regardless of whether the washer is on or off, as long as the unit is plugged in. This action supersedes all other commands.
- The increased pressure to the water sensor will show a different output frequency that corispond to the different water levels. The 4 water level conditions monitored are *empty*, *foam*, *main*, and *overflow*.



Water Level Control Operation

When the machine is empty, there is no water in the outer tub and no pressure in the air chamber, the sensor will output the empty frequency signal. As the water level rises, the air pressure in the air chamber increases, the water sensor frequency will change as the pressure change until the foam level reach, the tumble begins. Water temperature is read by the thermistor and fill valve percentage of operation (water tempering) is calculated for the main wash. When calculated, and/or when the load absorbs water, the tumbling will pause. Fill will continue until the main water level is reached (Adaptive fill), the water sensor output main level frequency signal, and main wash tumbling begins.

Water Levels

The foam water level is approximately 3 inches below the door opening and approximately 1.25 inch deep at the bottom rear of the wash basket.

Foam Water Level

The main water level is approximately 2.4 inches below the door opening and approximately 1.85 inches deep at the bottom rear of the wash basket.

Main Water Level

The overflow water level is approximately 5.5 inches above the door opening. Overflow protection will occur at this water level.

Overflow Water Level

Operation of the water level control can be checked by using service test mode t06. (See the Service Test Mode section in this guide.)

Specific failures associated with the water level control can initiate fault codes E23 and E65. (See the Service Test Mode section in this guide.)

To remove the water level control:

1. Remove the top panel. (See the Washer Components, Top Panel section in this guide.)
2. Press down the single tab, then disconnect each of the 1 wire harness.
3. Remove the pressure tube.

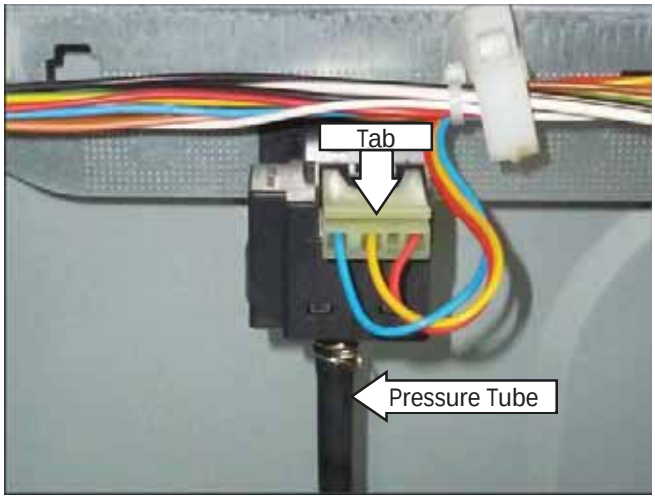
   NOTE: The pressure tube is difficult to remove.

   a. Squeeze the clamp and slide it back.

   b. Carefully break the hose loose by inserting a small f at-blade screwdriver under the hose to break the seal.

   c. Remove the hose.

Pull the bottom of the water level control outward, rotate it a quarter turn clockwise to clear the suspension spring.



Water Valve

The water valve assembly consists of 2 valve body and 3 solenoid coils. The water valve has a flow rate of 2.1 gallons (8 liters) per minute. It is inserted and retained in a cutout in the rear of the cabinet and held in place by a single 6 mm hex head screw. It is only available as a complete assembly.

Each solenoid coil has an approximate resistance value of 1.1k ohms.

Operation of the water valve can be checked by using service test modes t12. (See the Service Test Mode section in this guide.)

Specific failures associated with the water valve can initiate fault code E22. (See the Service Test Mode section in this guide.)

Water Valve Removal

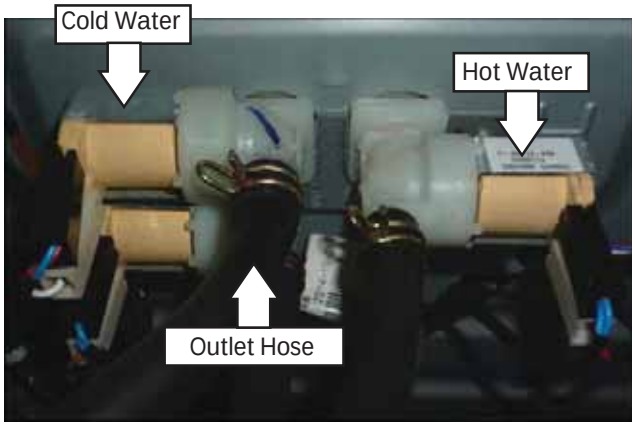
1. Disconnect the 4 connectors from the cold water (C) solenoid.
2. Disconnect the 2 connectors from the hot water (H) solenoid.
3. Disconnect the valve outlet hose:

   NOTE: The valve outlet hose is difficult to remove.

   a. Squeeze the clamp and slide it back.

   b. Carefully break the hose loose by inserting a small flat-blade screwdriver under the hose to break the seal.

   c. Remove the hose.



4. Remove the 2 (6 mm) hex head screws that holds the valve to the cabinet.

5. Move the valve horizontally to the right.

Pump

The pump consists of a 120 VAC, 60 Hz motor, impeller, impeller housing, and a removable strainer that helps prevent foreign objects from entering the pump impeller and drain outlet.

- The pump runs whenever the washer is in the spin function of a cycle.
- The pump runs if the water level control overflow switch is closed and the washer is plugged in (Overflow protection).
- The pump is capable of eliminating 17 gallons (64 liters) per minute.
- Recommended minimum standpipe diameter is 1 1/4 inches.
- Standpipe maximum height is 96 inches, measured from the floor at the washer location.
- The pump motor has an approximate resistance value of 10.6 ohms.

Operation of the pump can be checked by using service test mode t05. (See the Service Test Mode section in this guide.)

Specific failures associated with the pump can initiate fault code E31. (See the Service Test Mode section in this guide.)

Pump Removal

1. Remove the service panel.

   Caution: Under normal conditions, approximately 1 quart of water will drain out when the pump cleanout is removed.

2. Place a shallow pan under the drain cleanout.

3. Turn the pump cleanout counterclockwise approximately 2 turns, then pull outward.

   NOTE: Remove any debris or foreign objects from the strainer and interior of the pump before reinstalling.

4. Remove the drain hoses from the pump:

   NOTE: The drain hoses are difficult to remove.

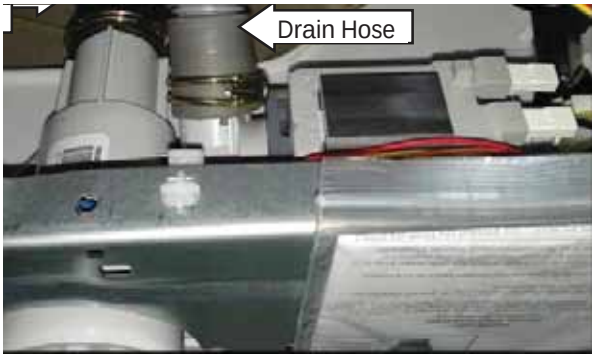
   a. Squeeze each clamp and slide it back.

   b. Carefully break each hose loose by inserting a small flat-blade screwdriver under the hose to break the seal.

   c. Remove the tub outlet hose from the pump inlet.

   d. Remove the drain hose from the pump outlet.

5. Disconnect the 2 wires from the pump.



6. Remove the 2 Phillips head screws that hold the pump to the chassis.

7. Lift the pump to release from the base.

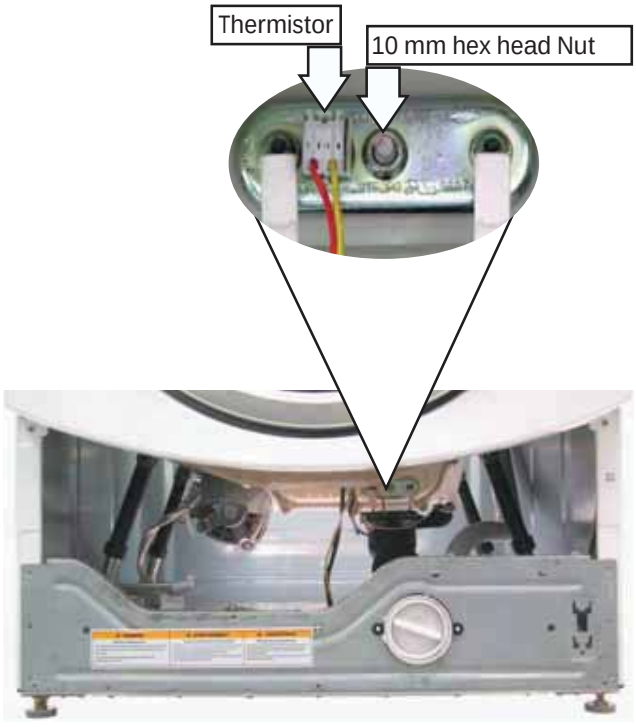
8. Remove the pump through the enlarged opening on the left side of the front frame.

Heater Assembly

- The heater assembly is located above the pump, and is accessed from the front of the washer.
- The heater assembly consists of a heating element and a water temperature thermistor.
- The heater can operate in whites, or stain wash cycles, and when sanitize wash temperature is selected.
- The heater assembly is held in place by a bracket attached to the inside of the outer tub and a 10 mm nut which compresses a rubber gasket to the tub opening.
- When the 10 mm hex nut is tightened, it squeezes the rubber gasket between 2 mounting plates to seal the heater assembly to the opening of the tub.
- The hex nut is set from the factory at 31 inch pounds of torque.

Operation of the heater assembly can be checked by using service test mode t07. (See the **Service Test Mode** section in this guide.)

Specific failures associated with the heater assembly can initiate fault codes E66 and E67. (See the **Service Test Mode** section in this guide.)



Heating Element Specifications:

- 120 VAC
- 970 Watts
- Approximately 8 Amps
- Approximately 15 ohms

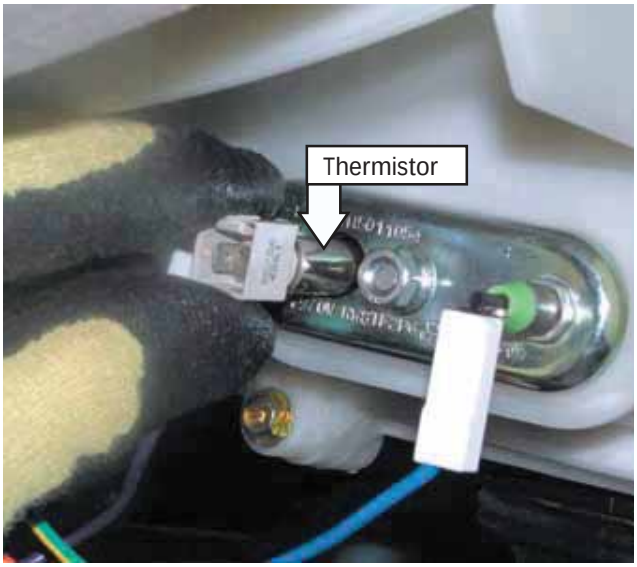
Thermistor Specifications:

- 12 K ohms. at 75°F (24°C).
- Resistance goes down as temperature goes up.

Thermistor Removal

1. Remove the service panel. (See the **Washer Components**, **Service Panel** section in this guide.)
2. Drain the washer using the pump cleanout. (See the **Washer Components**, **Pump** section in this guide.)
3. Disconnect the wire harness from the thermistor.
4. Loosen the 10 mm hex nut until it is flush with the end of the stud.
5. Push inward on the 10 mm hex nut to relax the rubber gasket.
6. Grasp the thermistor and pull outward.

Thermistor Removal

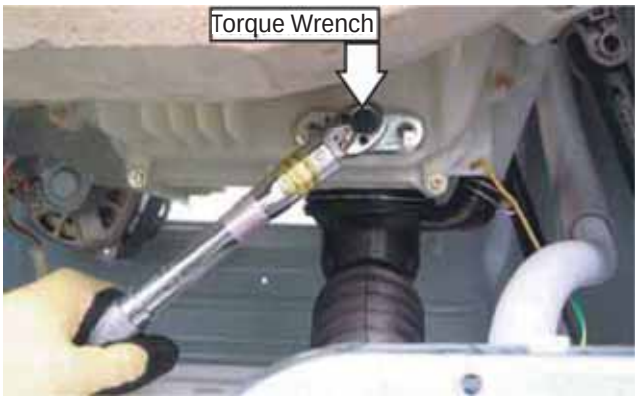


Thermistor Replacement

1. Push the thermistor into the rubber gasket until fully seated.

   NOTE: Ensure that the heater assembly is fully seated in the tub.

2. Use a torque wrench to tighten the 10 mm hex nut to 31 inch pounds of torque.



   CAUTION: Proper torque must be applied to the 10 mm hex nut to assure a proper seal. Under torqueing could cause water leakage; over torqueing could cause the tub to crack.

3. Reconnect the wire harness to the thermistor.

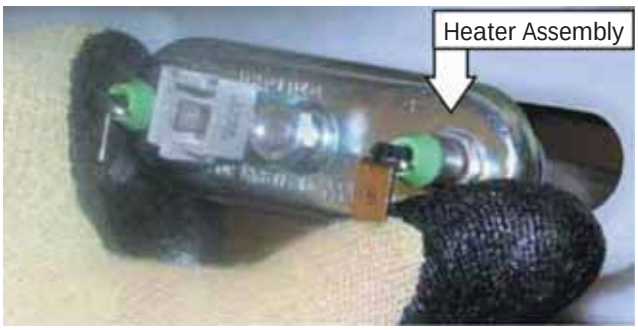
Heater Assembly Removal

1. Remove the service panel. (See the **Washer Components**, **Service Panel** section in this guide.)

2. Drain the washer using the pump cleanout. (See the **Washer Components**, **Pump** section in this guide.)

3. Disconnect the **blue** and the **purple** wires from the heater and the wire harness from the thermistor.

4. Loosen the 10 mm hex nut until it is flush with the end of the stud.



5. Push inward on the 10 mm hex nut to relax the rubber gasket.

6. Grasp the heater assembly and pull outward.

Heater Assembly Reinstallation

1. Slide the heater assembly into the tub opening and inside the bracket attached to the outer tub.

2. Seat the heater assembly in the tub opening.

3. Use a torque wrench to tighten the 10 mm hex nut to 31 inch pounds of torque.

   CAUTION: Proper torque must be applied to the 10 mm hex nut to assure a proper seal. Under-torqueing could cause water leakage; over-torqueing could cause the tub to crack.

4. Reconnect the wire harness to the thermistor and the **blue** and the **purple** wires to the heater.

Inverter

The inverter receives commands from the control board and controls motor operation.

For the inverter to operate the motor correctly requires a supply voltage of 120 VAC, DC input from the control board, and the three motor windings intact.

Specific failures associated with the inverter can initiate fault codes E4A, E4B, E4C, E50, E52, and E54. (See the **Service Test Mode** section in this guide.)

To check the inverter:

1. Remove the service panel. (See the **Washer Components**, **Service Panel** section in this guide.)
2. Press the 4 tabs inward and remove the junction box cover.
3. Enter test mode **t10**, **t11**, or **t13**.
4. Check for 120 VAC between the **blue** and **red** wires at the AC input harness.

NOTE: The 120 VAC inverter supply voltage is present only when the motor is supposed to be operating.

5. Unplug washer, then check motor resistance. (See the **Washer Components**, **Motor Assembly** section in this guide.)
6. If 120 VAC is present at the AC input harness and the motor resistance is correct, replace the inverter.

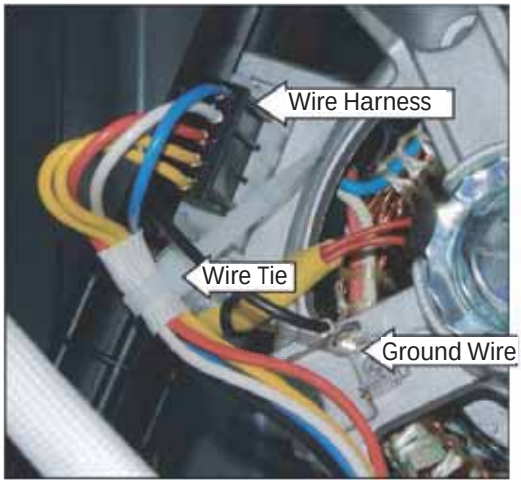
NOTE: If the inverter overheats, the washer will stop for 5 minutes.

The Separate Inverter

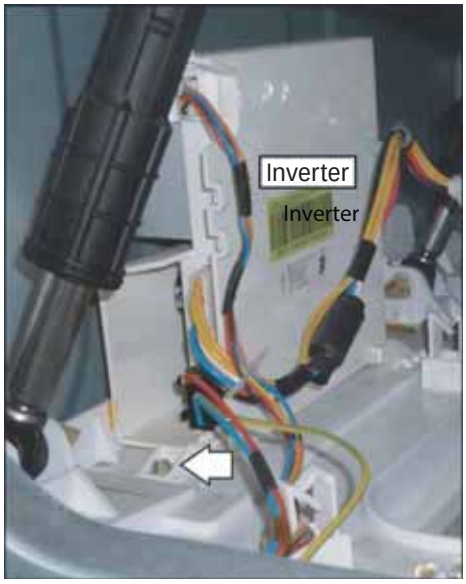
The inverter is enclosed in a protective housing and is located on the chassis, under the left side of the outer tub. It is inserted in 2 guides at the rear and held in place by a single Phillips head screw at the front.

Inverter Removal

1. Remove the service panel. (See the **Washer Components**, **Service Panel** section in this guide.)
2. Press the 4 tabs inward and remove the junction box cover.
3. Disconnect the AC and DC input wire harnesses from the inverter.
4. Press the lock tab and remove the motor ground wire.
5. Remove the plastic wire tie that holds the motor wiring in place.



6. Remove the single Phillips head screw that holds the front leg of the inverter to the base pan.



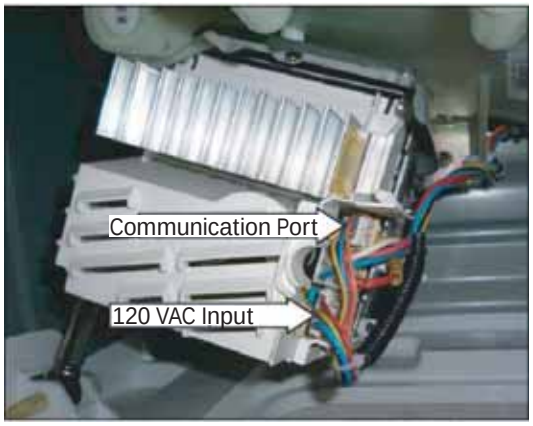
7. Slide the inverter rearward to clear the guides that hold the rear of the inverter to the chassis.

Remove the inverter through the enlarged opening on the left side of the front frame.

Inverter Motor AC (IMAC) Removal

The Inverter on some models are part of the motor. If the inverter should fail, replace the motor assembly.

1. Remove the plastic wire tie that holds the motor wiring in place.
2. Remove the wire harness.
3. Remove the motor. (See the **Washer Components**, **Motor Assembly** section in this guide.)



Motor Assembly

The motor assembly consists of a reversible, variable speed, 3-phase induction DC motor, and sensor. The motor drives the tub drive pulley with a 7-rib belt. The sensor monitors motor rpm and is connected to the control board. The motor assembly is checked from the front of the washer and removed from the rear.

Motor Assembly Diagnosis

1. Remove the service panel. (See the **Washer Components**, **Service Panel** section in this guide.)
2. Disconnect the motor wire harness.

   On the motor plug, check for an approximate resistance value of 6 ohms between any two of the three wires:

   - Blue to white - 6 ohms
   - Blue to red - 6 ohms
   - White to red - 6 ohms
   - The sensor has a resistance value of approximately 118 ohms between the two **orange** wires.

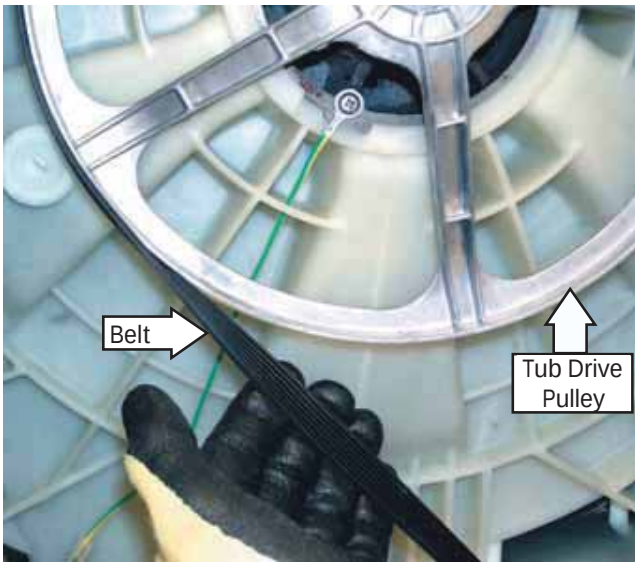
Operation of the motor assembly can be checked by using service test modes **t10**, **t11**, and **t14**. (See the **Service Test Mode** section in this guide.)

Specific failures associated with the motor assembly can initiate fault codes E42, E48, and E49. (See the **Service Test Mode** section in this guide.)

Motor Removal

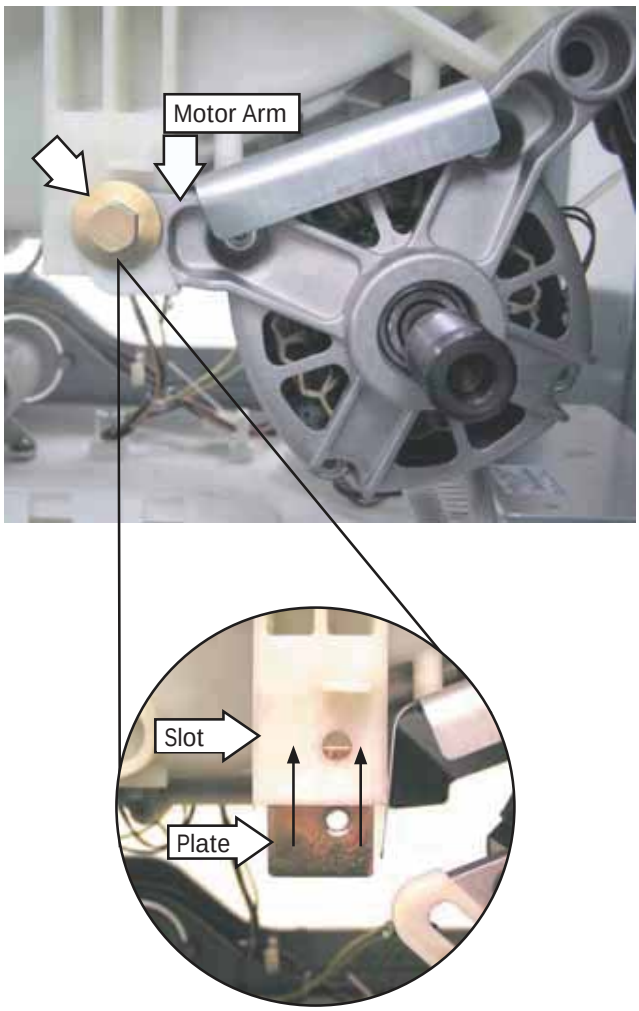
1. Remove the 4 Phillips head screws from the cabinet rear cover.
2. Pull the cover outward from the middle.

3. Remove the belt by turning the tub drive pulley and rolling the belt off the pulley.



NOTE: The belt is elastic and is designed to be removed and installed in this manner.

4. Remove the 1/2 inch bolt from the threaded plate that holds the motor arm to the outer tub.



NOTE: The threaded plate can fall out of the recessed slot in the motor mount. Ensure this plate is reinserted in the slot upon reassembly.

NOTE: When reinstalling the bolt, apply Loctite (Part #: WX5X1005) to the bolt threads. Ensure that the motor arm is at the lowest position under the motor bolt before tightening.

5. Rock the motor rearward to clear the motor mounts from the outer tub. Place the motor on the washer chassis.

6. Disconnect the motor wire harness.

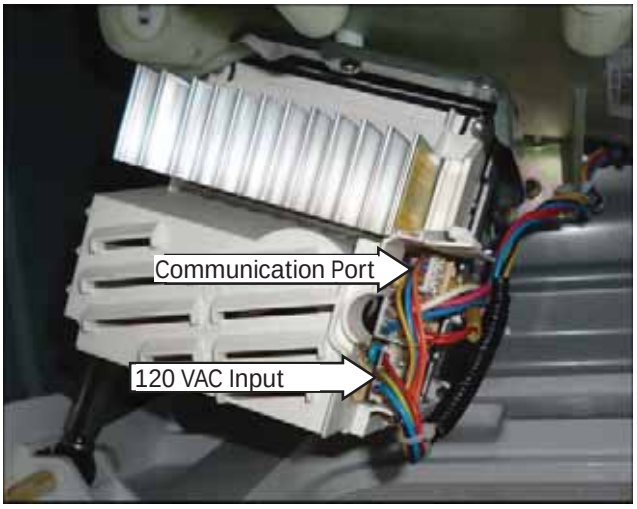
7. Press the lock tab and remove the motor ground wire.

8. Remove the plastic wire tie that holds the motor wire harness and ground wire to the motor.

9. Remove the motor.

NOTE: When reinstalling the belt, ensure that the belt is positioned to track in the 7 outer grooves of the motor pulley.

NOTE: Model 1100, 1200, 1300 and 1600 use IMAC motor; there are no separate inverters in these units.

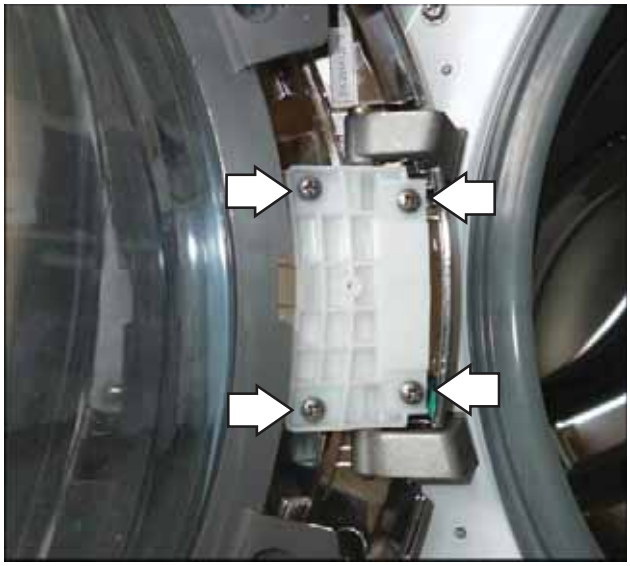


Door

Door Component Removal

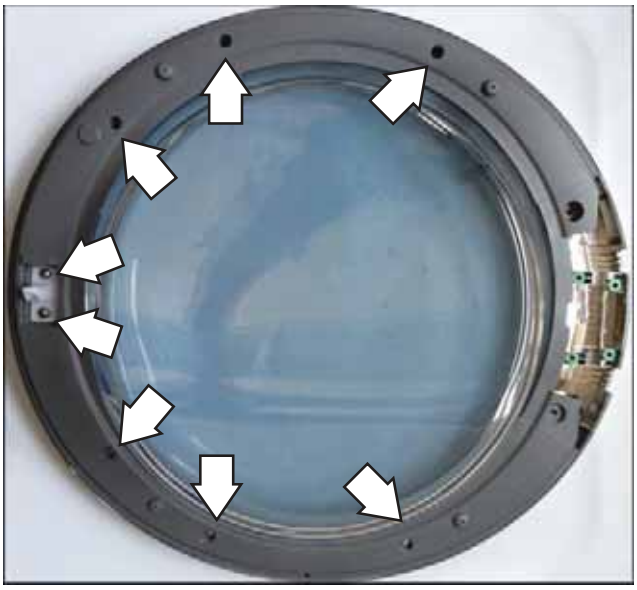
1. Remove the 3 Phillips head screws that hold the hinge cover to the door. Lift the hinge cover from the door.

2. Remove the 4 Phillips head screws that hold the door to the hinge door plate.



NOTE: Place the door on a soft protected flat surface so that the door glass faces up. (The door should rest on the handle side.)

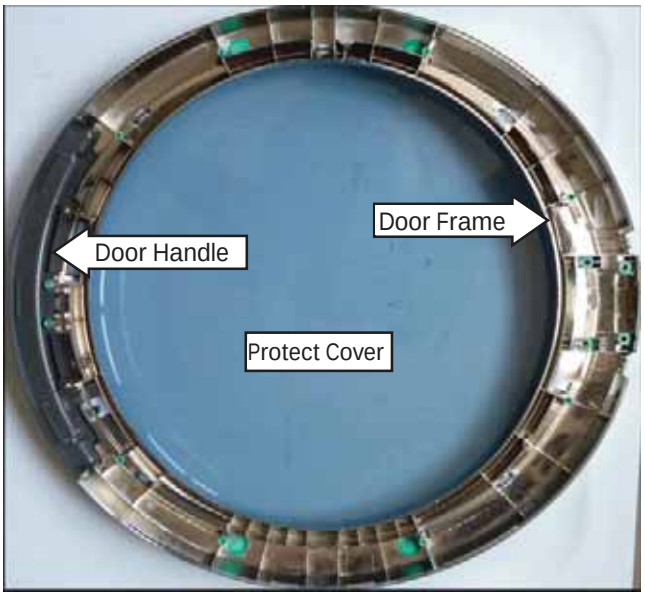
3. Remove the 8 Phillips head screws that hold the door cover and door strike to the door frame.



4. Grasp and unsnap the door cover from the door frame.

5. Lift the door glass out of the door frame.

NOTE: The door handle, door frame and protect cover are replaced as an assembly.

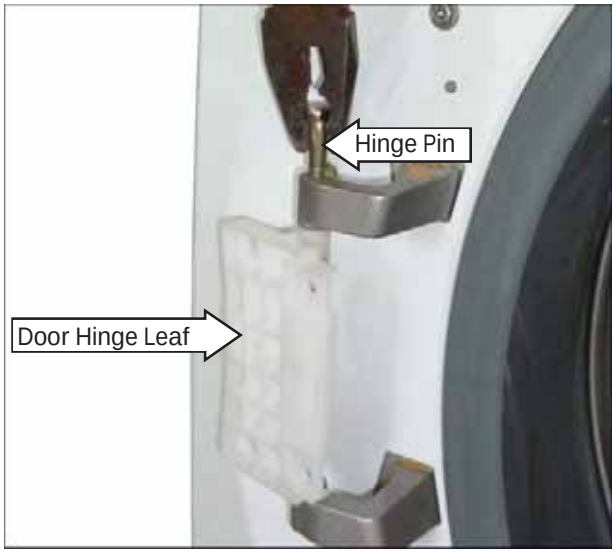


Door Hinge

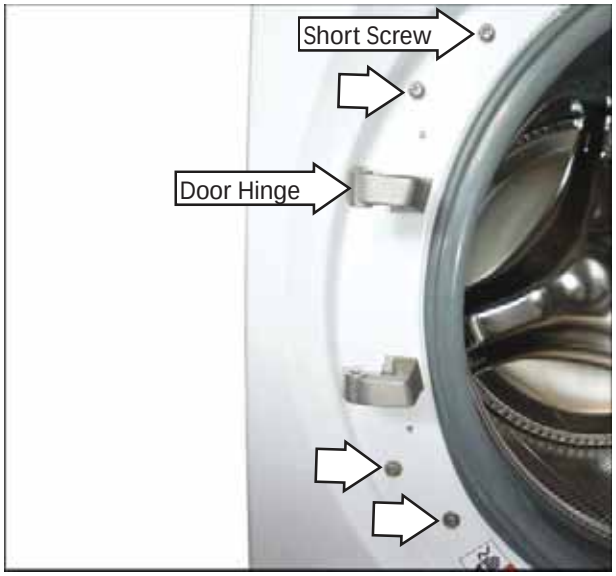
Door Hinge Removal

1. Remove the door. (See the **Washer Components**, **Door** section in this service guide.)
2. Grasp the hinge pin with a pair of pliers and pull the pin out of the hinge. Remove the door hinge leaf.

   NOTE: It may be helpful to drive the hinge pin upward using a punch.



3. Remove the gasket from the front panel. (See the **Washer Components**, **Front Panel** section in this service guide.)
4. Push and fold the gasket inside the wash basket.
5. Remove the four Phillips head screws that hold the door hinge to the front panel.



   Caution: When reinstalling the door hinge, be sure to use the short screw on the top. Damage to the dispenser inlet may result if the wrong screw length is used.

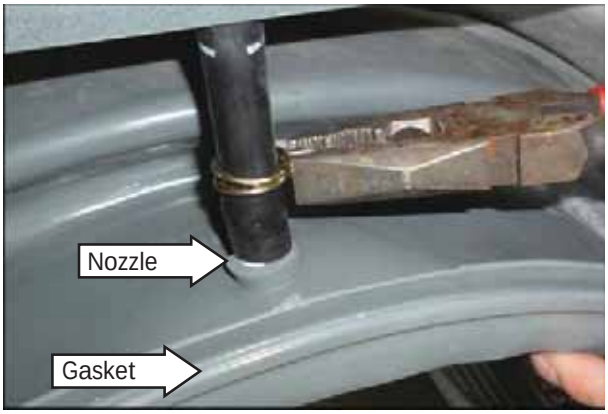
6. Push the tub assembly back while pressing the hinge arm inward and carefully remove the door hinge through the opening.

Tub Gasket (Boot)

The tub gasket provides a watertight seal between the front and the outer tub. The front of the tub gasket is secured to the front panel flange by a spring and wire located in the fold of the gasket. The back of the tub gasket is attached to the outer tub lip with a wire and bolt assembly.

Tub Gasket Removal

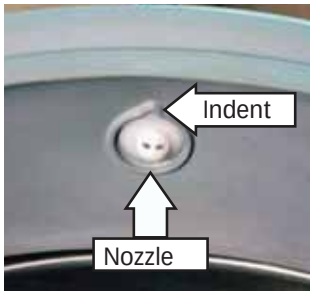
1. Remove the front panel. (See the **Washer Components**, **Front Panel** section in this service guide.)
2. Pull down and disengage the gasket from the nozzle.



NOTE: When reinstalling the nozzle to the gasket, it may be helpful to remove the nozzle from the hose. Ensure that the washer is placed on the outside and that the nozzle is aligned with the indent on the inside of the gasket.

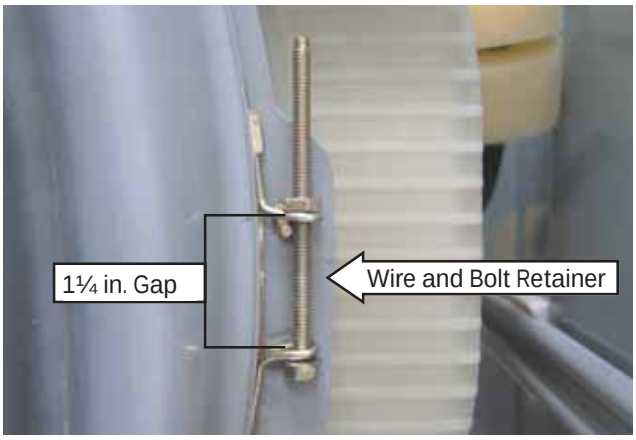
Gasket Outside

Gasket Inside

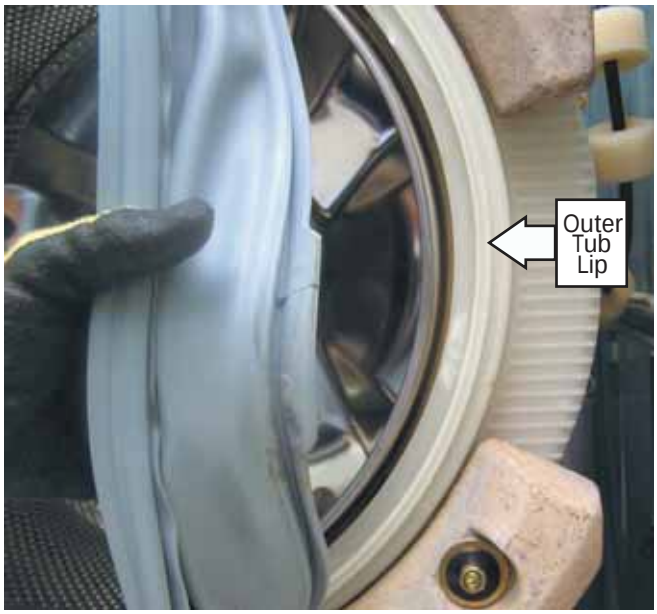


3. Loosen the 7 mm bolt that holds the wire and bolt assembly to the outer tub lip. Remove the wire and bolt assembly from the tub gasket.

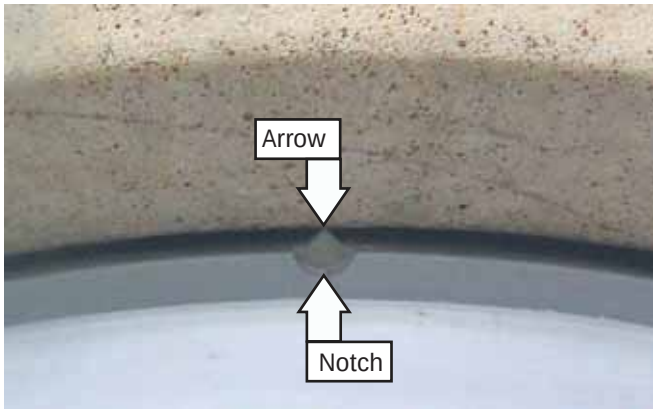
NOTE: When reinstalling the wire and bolt, tighten to a gap of approximately 1¼ inches (as shown). Do not overtighten.



4. Pull the tub gasket off the outer tub lip.



NOTE: When reinstalling the tub gasket on the outer tub, align the notch in the gasket with the arrow located on the top of the outer tub lip before tightening the wire and bolt assembly.



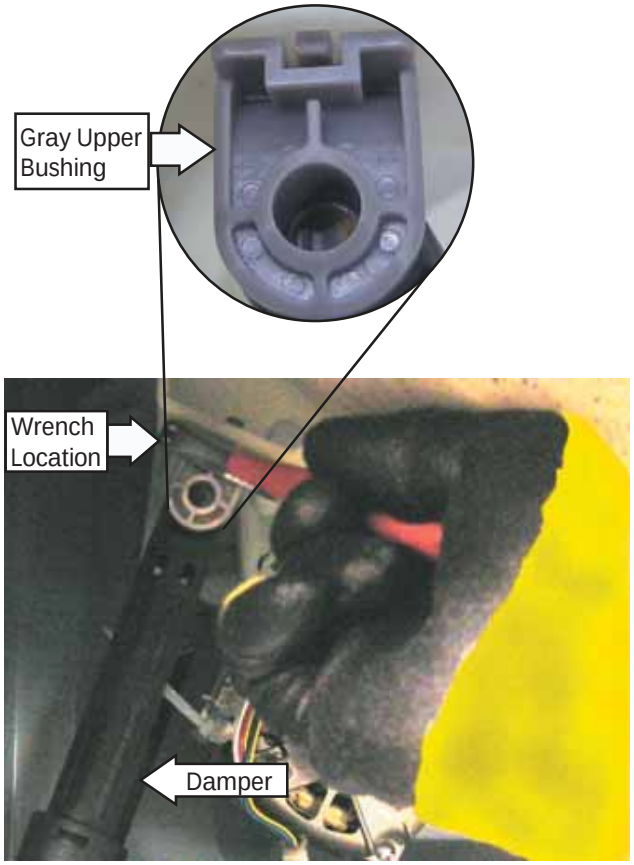
Dampers

Each of the four dampers are secured to the outer tub by a gray upper bushing that locks in a slot in the outer tub. Each damper is held to the chassis with a plastic pin.

Damper Removal

Caution: When removing, do not twist the damper cylinder by hand. Stress may result in the damper developing a noise at a later date.

1. Rotate the gray upper bushing a quarter-turn clockwise (as viewed from the top) using a 6 inch adjustable crescent wrench with a jaw opening of approximately 7/8 inch.
2. Compress and remove the damper from the slot in the outer tub.



3. Remove the pin that secures each damper to the chassis by pressing the lock tab while pulling the pin out.

   NOTE: It may be helpful to tap the pins out with a small hammer while pressing on the lock tabs. A socket can be usedto assist pushing the tabs in preventing them from being damaged.

Damper Replacement

NOTE: It the pin is damaged when removing from the chassis, install the new pin that is supplied with the replacement damper.

1. Insert and fully seat the pin that secures each damper to the chassis.

   NOTE: It may be helpful to tap the pins into the chassis with a small hammer.

2. Extend and fully insert the damper into the slot in the outer tub.
3. Rotate the gray upper bushing a quarter-turn counterclockwise (as viewed from the top), using a 6 inch adjustable crescent wrench with a jaw opening of approximately 7/8 inch.

   NOTE: Ensure the 2 lock tabs on the gray upper bushing are in the square holes in the outer tub.

Wash Basket

The wash basket is contained inside the outer tub. The wash basket is rotated by a belt driven tub drive pulley. A drive nut attaches the tub drive pulley to the wash basket. To remove the wash basket, it will become necessary to separate the outer tub halves.

Wash Basket Removal

1. Drain the washer using the pump cleanout. (See the **Washer Components**, **Pump** section in this service guide.)

2. Remove the top, control, service, and front panels. (See the **Washer Components**, **Top Panel**, **Control Panel**, **Service Panel**, and **Front Panels** sections in this service guide.)

3. Remove the cabinet rear cover, then remove the belt. (See the **Washer Components**, **Motor Assembly** section in this service guide.)

4. Remove the (24 mm) drive nut that holds the tub drive pulley to the wash basket. Remove the pulley.

Caution: The nylon locking material used inside the drive nut will be damaged upon removal. Use a replacement drive nut when reinstalling the tub drive pulley. Use a torque wrench to tighten the 24 mm hex nut to 44 foot pounds of torque.

5. Remove the dispenser vent hose from the outer tub, and the gasket inlet hose from the clip. (See the **Dispenser** sections in this guide.)

6. Remove the control rear cover and the front bracket and set them towards the top rear of the washer. (See the **Dispenser** sections.)

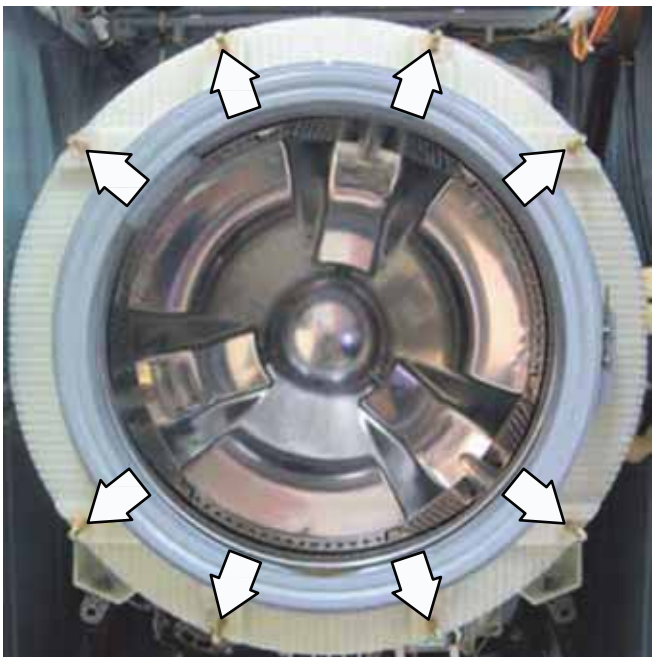
7. Set the dispenser aside.

8. Remove the 4 (10 mm) hex head screws and washers that hold the top counterweight to the outer tub. Lift the counterweight .

   NOTE: When reinstalling the top counterweight, use a torque wrench to tighten the 4 (10 mm) screws to 80 inch pounds of torque.

9. Remove the 8 (13 mm) nuts and washers from the bolts that hold the front top and bottom counterweights to the front of the outer tub.

10. Remove the counterweights and the 8 bolts from the slots in the outer tub.



11. Disconnect the heater assembly wires.

12. Remove the plastic wire tie that holds the heater assembly wiring and the tub ground wire to the outer tub.

13. Remove the front dampers from the outer tub. (See the Washer Components, Dampers section in this service guide.)

14. Remove the 26 (8 mm) hex head screws from the perimeter of the outer tub.

15. Press the 2 tabs located on the sides of the outer tub inward and remove the outer tub front half.

    NOTE:

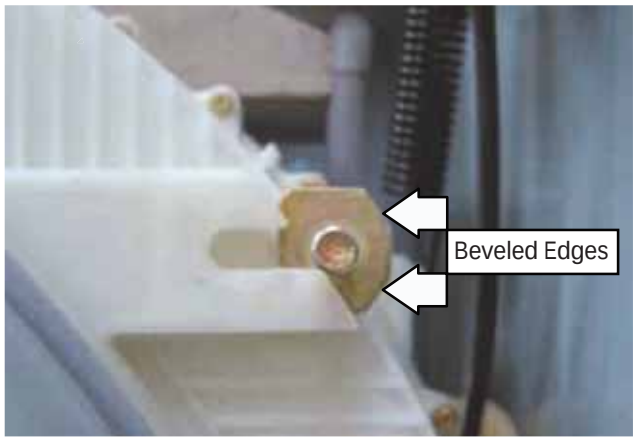
    - Install new outer tub seal whenever tub halves have been separated. Use a torque wrench to tighten the 26 tub screws to 45 inch pounds of torque.
    - When installing outer tub front half, ensure heater is inserted inside the bracket attached to the rear half of the outer tub. (See the Washer Components, Heater Assembly section in this service guide.)

16. Pull the wash basket out of the outer tub rear half.

Installing Front Counterweights

When installing the front counterweights, make sure the short bolts are used to attach the top counterweight and the long bolts are used to attach the bottom counterweight. Insert the bolts into the slots with beveled edges outward.

Use a torque wrench to tighten the 8 (13 mm) nuts to 142 in. pounds of torque.



NOTE: To make installation of the front bottom counterweight easier, secure the placement of the bottom bolts with electrical tape.

Outer Tub Assembly and Suspension

The outer tub assembly is constructed in two halves and contains the wash basket. The bearing and seal assembly is part of the outer tub rear half. The outer tub assembly is supported by two suspension springs and four dampers. Each spring is located between the top of the tub assembly and a cabinet top brace, one on each side. Washer stabilization is achieved by the use of four dampers that are located between the bottom of the tub assembly and chassis, two per side.

Outer Tub Assembly Removal

WARNING: The outer tub assembly is heavy. Removal of counterweights is required before attempting to remove the tub assembly.

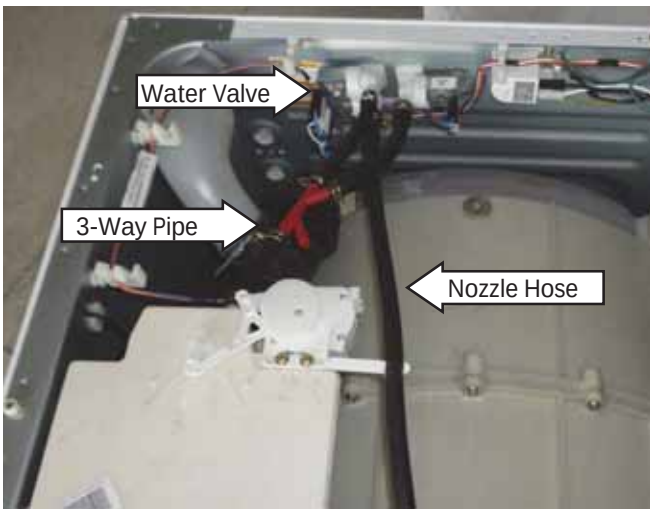
1. Drain the washer using the pump cleanout. (See the **Washer Components**, **Pump** section in this service guide.)
2. Remove the top, control, service, and front panels. (See the **Washer Components**, **Top Panel**, **Control Panel**, **Service Panel**, and **Front Panels** sections in this service guide.)
3. Remove the dispenser. (See the **Washer Components**, **Dispenser** section in this service guide.)
4. Remove the nozzle hose from the Water Valve:

   NOTE: The nozzle hose is difficult to remove.

   a. Squeeze the clamp and slide it back.

   b. Carefully break the nozzle hose loose by inserting a small flat-blade screwdriver under the hose to break the seal.

   c. Remove the hose.



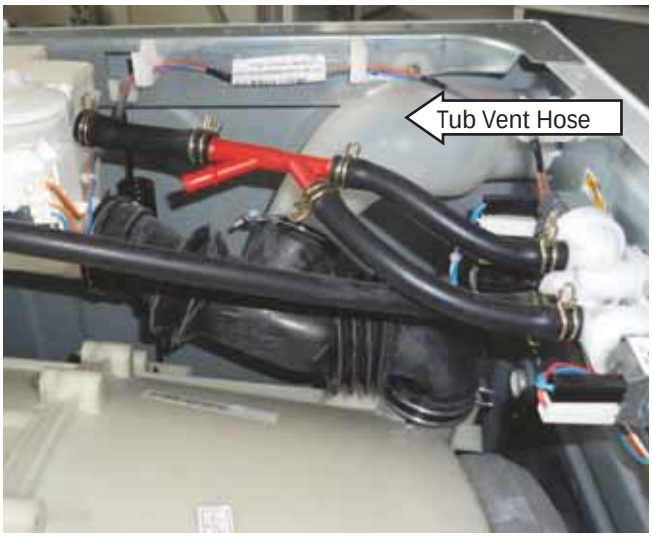
5. Set the front bracket aside.
6. Remove the tub vent hose from the left rear of the outer tub:

   NOTE: The tub vent hose is difficult to remove.

   a. Squeeze the clamp and slide it back.

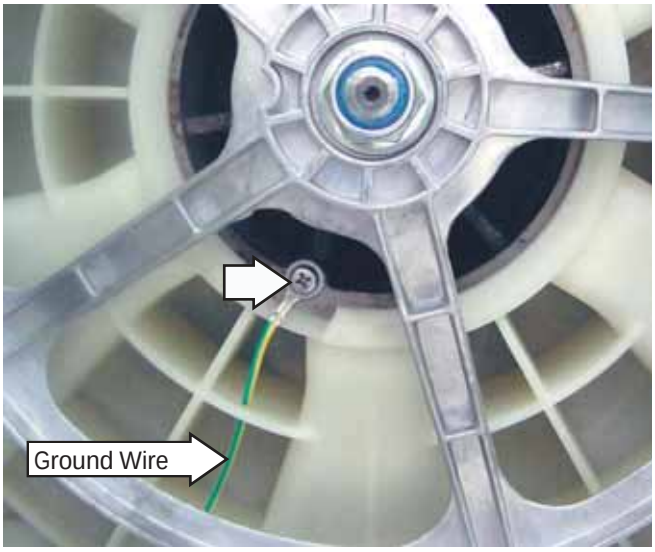
   b. Carefully break the tub vent hose loose by inserting a small flat-blade screwdriver under the hose to break the seal.

   c. Remove the hose.



7. Remove the air pipe from the water level control.
8. Disconnect the heater assembly wires.
9. Remove the plastic wire tie that holds the heater assembly wiring and the tub ground wire to the outer tub.
10. Disconnect the motor wire harness, ground wire, and the plastic wire tie that holds the wiring to the motor.
11. Remove the tub drain hose from the pump.
12. Remove the four Phillips head screws from the cabinet rear cover.
13. Pull the cover outward from the middle.

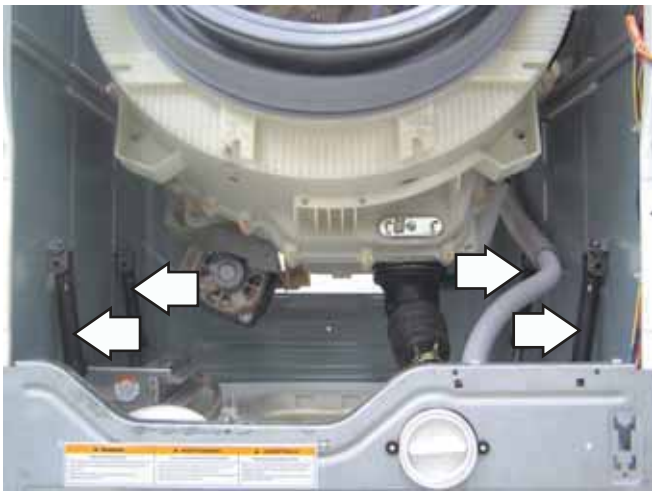
14. Remove the Phillips head screw that holds the tub ground wire. Remove the ground wire from the outer tub wire guides.



15. Remove the top, front top, and bottom counterweights. (See the **Washer Components**, **Wash Basket** section in this service guide.)

16. Remove the 4 dampers from the outer tub. (See the **Washer Components**, **Dampers** section in this service guide.)

17. Compress the dampers and position them towards the outside of the cabinet.



18. Lift the outer tub assembly up, then release the two suspension springs from the slotted plastic inserts in the cabinet top braces.

19. Carefully remove the tub assembly out the front of the cabinet.

NOTE: When reinstalling the tub assembly, hook each of the suspension springs in the forward hole of the outer tub spring mounts.

Service Test Mode

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

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

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

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

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

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

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

Fault Codes

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

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

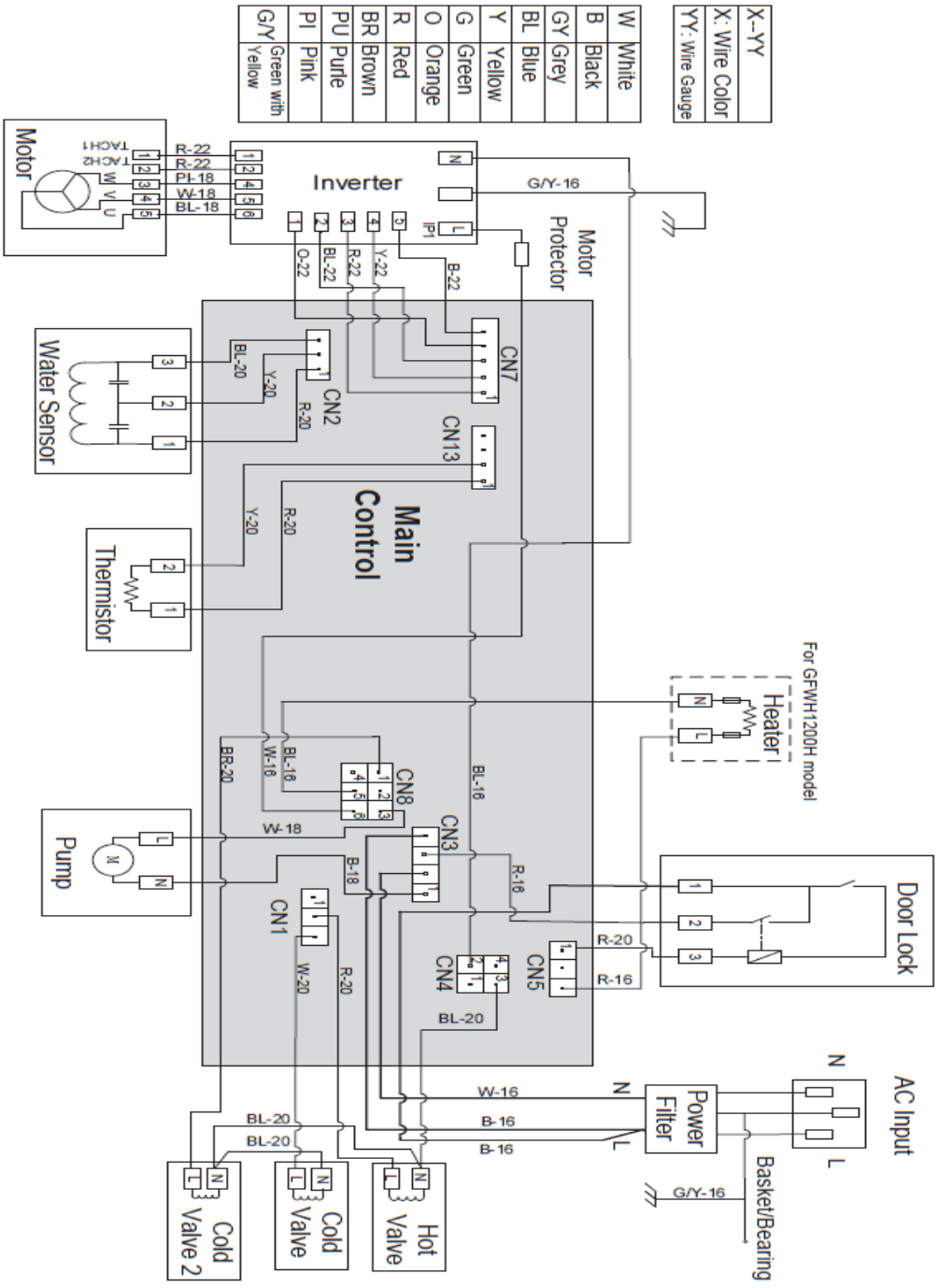
Fault Code	Description	Problem	Possible Cause/Action
E4C	Over volts	Over volts - DC bus (inverter).	• Check Motor - t10 tumble, t11 spin, t13 spin. • Power down (unplug) washer, wait 30 seconds and retry - if reoccurs, replace inverter. (Note: Cannot occur with open winding.)
E50	Drive/Control Interface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

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

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

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

Schematics



Washer :

GFWN1100HWW

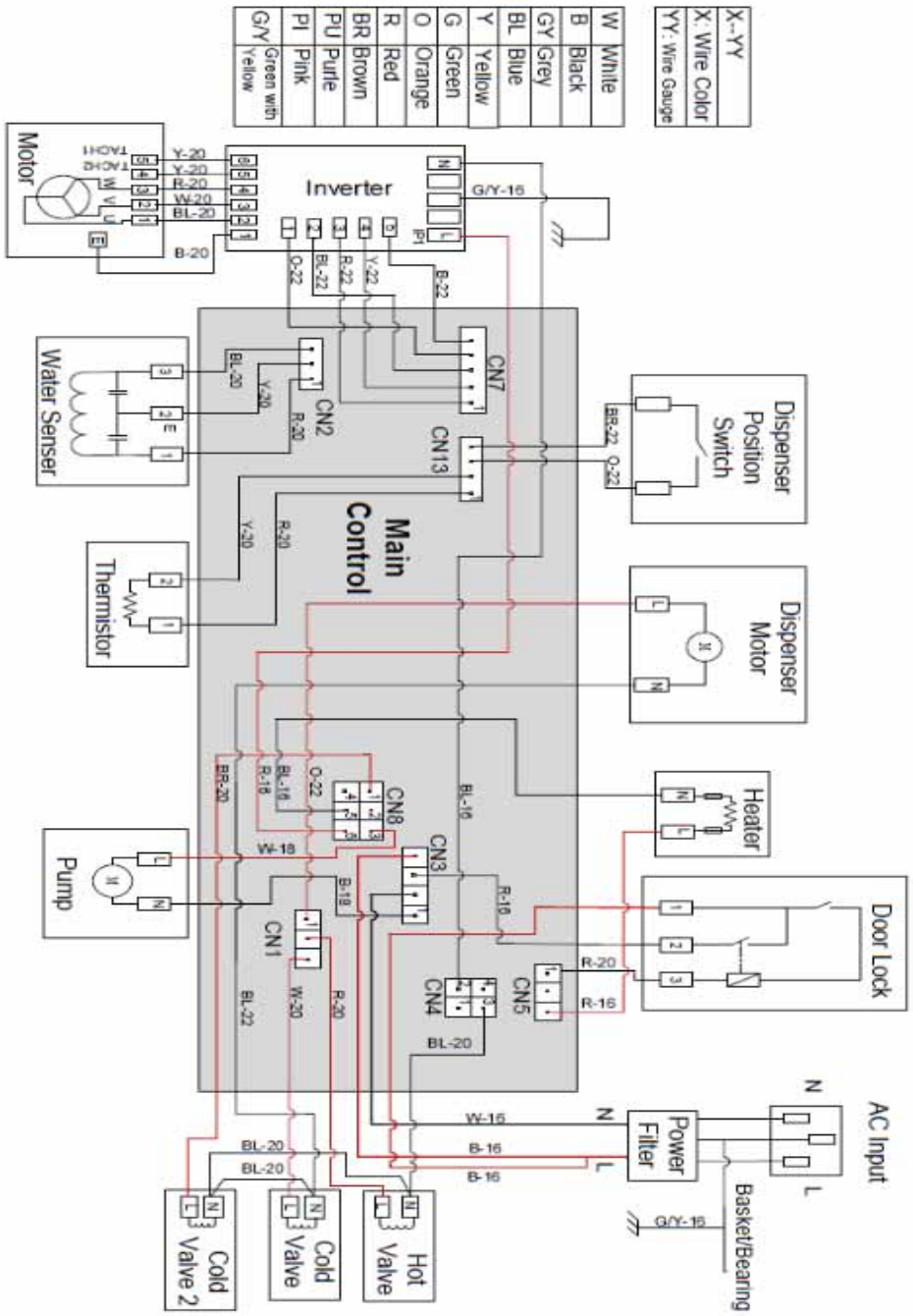
GFWH1200HWW

GFWN1300JWW

GFWN1600JWW

GFW400SCK0WW

Schematics



Washer:
GFWS1700HWW
GFWS1705H0DG
GFW450SPK0DG
GFW450SSK0WW

Warranty

All warranty service provided by our Factory Service Centers or an authorized Customer Care® technician. To schedule service, visit us on-line at GEAppliances.com, or call 800.GE.CARES (800.432.2737). Please have serial number and model number available when calling for service. In Canada, call 800.5613344.

Staple your receipt here. Proof of the original purchase date is needed to obtain service under the warranty.

Servicing your appliance may require the use of the onboard data port for diagnostics. This gives a GE Appliances Factory Service technician the ability to quickly diagnose any issues with your appliance and helps GE improve its products by providing GE with information on your appliance. If you do not want your appliance data to be sent to GE, please advise your technician NOT to submit the data to GE at the time of service.

For The Period Of:	*GE Appliances Will Replace:*
One Year *From the date of the original purchase*	*Any part of the refrigerator which fails due to a defect in materials or workmanship. During this limited one-year warranty. GE will also provide, free of charge, all labor and in-home service to replace the defective part.*

What GE Will Not Cover (for customers in the United States):

- Service trips to your home to teach you how to use the product.
- Improper installation, delivery or maintenance.
- Failure of the product if it is abused, misused, **modified or used for other than the intended** purpose or used commercially.
- Loss of food due to spoilage.
- Replacement of house fuses or resetting of circuit breakers.
- Damage caused after delivery.
- **Replacement of the water filter cartridge, if** included, due to water pressure that is outside **the specified operating range or due to excessive** sediment in the water supply.
- Replacement of the light bulbs, if included, or **water filter cartridge, if included, other than as** noted.
- **Damage to the product caused by accident, fire, or** acts of God.
- Incidental or consequential damage caused by possible defects with this appliance.
- Product not accessible to provide required service.
- **Damage to finish such as surface rust, tarnish, or** small blemishes not reported within 48 hours of delivery.
- Products which are not defective, broken, or which are working as described in the owner's manual.

EXCLUSION OF IMPLIED WARRANTIES – Your sole and exclusive remedy is product repair as provided in this Limited **Warranty. Any implied warranties, including the implied warranties of merchantability or fitness for a** particular purpose, are limited to one year or the shortest period allowed by law.

For US Customers: This warranty is extended to the original purchaser and any succeeding owner for products purchased for home use within the USA. If the product is located in an area where service by a GE Authorized Servicer is not available, you may be responsible for a trip change or you may be required to bring the product to an Authorized GE Service location for service. Proof of original purchase date is needed to obtain service under the warranty. In Alaska, the warranty excludes the cost of shipping or service calls to your home.

Some states do not allow the exclusion or limitation of incidental or consequential damages. This warranty gives you specific legal rights, and you may also have other rights which vary from state to state. To know what your legal rights are, consult your local or state consumer affairs office or your state's Attorney General.

Warrantor: General Electric Company. Louisville, KY 40225

For Customers in Canada: This warranty is extended to the original purchaser and any succeeding owner for products purchased in Canada for home use within Canada . In-home warrant service will be provided in areas where it is available and deemed reasonable by Mabe to provide.

Warrantor Canada: MC Commercial, Burlington, Ontario, L7R 5B6

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