Multimedia Enhanced

Whirlpool®

SERVICE MANUAL

WHIRLPOOL 1.9 & 2.3 CU FT COMPACT FRONT-LOAD WASHERS



WFW3090GW (1.9 CU FT)
WFW5090GW (2.3 CU FT)

FORWARD

This Whirlpool Service Manual, (Part No. W11040042A), provides the In-Home Service Professional with service information for the “WHIRLPOOL 1.9 & 2.3 CU FT COMPACT FRONT LOAD WASHERS.”

The Wiring Diagram used in this Service Manual is typical and should be used for training purposes only. Always use the Wiring Diagram supplied with the product tech sheet when servicing the washer.

For specific operating and installation information on the model being serviced, refer to the “Use and Care Guide” or “Installation Instructions” provided with the washer.

GOALS AND OBJECTIVES

The goal of this Service Manual is to provide information that will enable the In-Home Service Professional to properly diagnose malfunctions and repair the “WHIRLPOOL COMPACT FRONT LOAD WASHER.”

The objectives of this Service Manual are to:

- Understand and follow proper safety precautions.
- Successfully troubleshoot and diagnose malfunctions.
- Successfully perform necessary repairs.
- Successfully return the washer to its proper operational status.

WHIRLPOOL CORPORATION assumes no responsibility for any repairs made on our products by anyone other than authorized In-Home Service Professionals.

Copyright © 2016, Whirlpool Corporation, Benton Harbor, MI 49022

TABLE OF CONTENTS

WHIRLPOOL COMPACT FRONT LOAD WASHER

SECTION 1 — GENERAL INFORMATION

WASHER SAFETY 1-2
GENERAL INFORMATION 1-3
CONTROL PANEL AND FEATURES 1-4
WASHER MAINTENANCE 1-6
TECH SHEET LOCATION 1-8
MODEL AND SERIAL NUMBER LOCATION 1-8
MODEL AND SERIAL NUMBER NOMENCLATURE 1-9
CLEANING THE DRAIN PUMP FILTER/DRAINING RESIDUAL WATER 1-10
PRODUCT SPECIFICATIONS 1-11
NOTES 1-12

SECTION 2 — DIAGNOSTICS & TROUBLESHOOTING

MANUALLY UNLOCKING THE DOOR LOCK SYSTEM 2-2
CONTROL PANEL 2-3
ABBREVIATIONS 2-4
DIAGNOSTIC GUIDE 2-4
SELF DIAGNOSTIC MODE 2-4
ACTIVATING SERVICE DIAGNOSTIC MODE 2-4
SERVICE TEST CYCLE 2-4
EXIT SERVICE DIAGNOSTIC MODE 2-4
SERVICE TEST CYCLE CHART 2-5
FAULT/ERROR CODES/TABLE 2-6
TROUBLESHOOTING GUIDE 2-11
NOTES 2-14

SECTION 3 — COMPONENT TESTING

COMPONENT TESTING: SAFETY INFORMATION 3-2
WIRING DIAGRAM 3-3
COMPONENT TESTING 3-4
TEST #1: ACU POWER CHECK 3-4
APPLIANCE CONTROL UNIT & PINOUTS 3-5
ACCESSING THE APPLIANCE CONTROL UNIT 3-5
TEST #2: USER INTERFACE (UI) 3-6
TEST #3: MOTOR CIRCUIT 3-8
TEST #4: DOOR LOCK SYSTEM 3-9
TEST #5: WATER INLET VALVE 3-10
TEST #6: WATER LEVEL SENSOR (APS) 3-11
TEST #7: DRAIN PUMP 3-12
TEST #8: HEATER ELEMENT 3-13
TEST #9: TEMPERATURE SENSOR 3-14
TEST #10: DISPENSER SYSTEM 3-15
TEST #11: EQUALIZATION TANK/DRAIN HOSE 3-16

TABLE OF CONTENTS (CONT.)

WHIRLPOOL COMPACT FRONT LOAD WASHER

SECTION 4 — COMPONENT ACCESS

CONSOLE AND CABINET PARTS....4-2
DOOR PARTS....4-3
PUMP PARTS....4.4
DISPENSER PARTS....4-5
TUB AND DRIVE PARTS....4-6
REMOVING THE TOE PANEL/MANUALLY OPEN DOOR....4-7
REMOVING THE TOP PANEL....4-8
REMOVING THE WATER VALVE ASSEMBLY....4-9
REMOVING THE PRESSURE SWITCH....4-10
REMOVING THE INTERFERENCE FILTER....4-11
REMOVING THE DISPENSER HOUSING....4-12
REMOVING THE APPLIANCE CONTROL UNIT (ACU)....4-13
REMOVING THE HEATER....4-14
REMOVING THE CONSOLE/USER INTERFACE....4-15
REMOVING THE FRONT PANEL ASSEMBLY....4-16
REMOVING THE DRAIN PUMP & ECO BALL....4-17
REMOVING THE DIRECT DRIVE MOTOR....4-18
REMOVING THE TUB ASSEMBLY....4-20
NOTES....4-22

*** Video Available**  **Look for this ICON throughout Section 4**

PRODUCT SPECIFICATIONS & WARRANTY INFORMATION SOURCES (inside back cover)

Section 1: General Information

This section provides general safety, parts, and information for the “Whirlpool Compact Front Load Washer.”

- Washer Safety
- General Information
- Control Panel and Features
- Washer Maintenance
- Model/Serial Number Location
- Tech Sheet Location
- Model & Serial Number Nomenclature
- Cleaning the Drain Pump Filter/Draining Residual Water
- Product Specifications

Washer Safety

Your safety and the safety of others are very important.

We have provided many important safety messages in this manual and on your appliance. Always read and obey all safety messages.



This is the safety alert symbol.

This symbol alerts you to potential hazards that can kill or hurt you and others.

All safety messages will follow the safety alert symbol and either the word “DANGER” or “WARNING.” These words mean:

⚠DANGER — **You can be killed or seriously injured if you don't immediately follow instructions.**

⚠WARNING — **You can be killed or seriously injured if you don't follow instructions.**

All safety messages will tell you what the potential hazard is, tell you how to reduce the chance of injury, and tell you what can happen if the instructions are not followed.

General Information

INTRODUCTION

This 24” washer installs virtually anywhere. Do laundry in almost any space with the Whirlpool space-saving compact washer and dryer. The compact front load washer offers exceptional fabric care with features like the Quick Wash cycle to clean small, lightly soiled loads or the Handwash cycle that cleans clothes gently on our compact washing machine.



24” Compact Front Load Washer

Features:

Space-Saving Design:

The Whirlpool compact front load washer has a 24” width. Its slim design makes it flexible enough to install virtually anywhere, making it a space-saving design with a 1.9 or 2.3 cu. ft. capacity.

Exceptional Fabric Care:

The consumer receives tailored fabric care for their favorite outfits. They can choose from 10 cycles and up to 10 options to match their fabric type and soil level. Each load receives customized drum movements to consistently provide exceptional fabric care.

Sleek Tap Touch Controls with Memory:

Start the washer quickly using the sleek control interface of the Tap Touch controls with Memory. This technology allows direct access to washer functions and even remembers the consumer’s last cycle and settings to save them time.



Guided Mode:

Once the washing machine is on, the consumer can use guided mode to follow the recommended steps displayed on the console for the right fabric care for their family’s lifestyle.

Cycles:

Synthetics Cycle:

Care for everyday wear. Clothes will remain cared for during the Synthetics cycle as warm water and max spin speed work together to gently lift normal soils from fabrics.

Quick Wash Cycle:

Wash an outfit today and wear it out tonight using the Quick Wash cycle that cleans small, lightly soiled loads.

Handwash Cycle:

The Handwash cycle uses lower spin speeds combined with reduced tumbling to soak the load and clean clothes gently.

Wool Cycle:

Cool water and slow spin speeds clean washable delicates and provide everything expected from gentle fabric care on the Wool cycle.

Options:

Prewash Option:

Skip presoaking in the sink by hand and let the washer do it using the Prewash option. Additional wash time before the cycle starts helps take on heavily soiled loads that contain tough stains.

Heavy Soil Option:

The Heavy soil option provides efficient cleaning action that helps break down stains and rinses away soils.

Save Time Option:

Get clothes ready to wear sooner thanks to the Save time option that cleans lightly soiled loads that don’t need the full wash time.

TumbleFresh Option:

Keep clothes fresh without having to immediately transfer them to the dryer. The TumbleFresh™ option activates after the wash cycle is finished and tumbles clean clothes periodically for up to 6 hours to help prevent wrinkles from setting in.

Colors Option:

Preserve colors. The Colors option uses cold water to help protect colors so they remain vibrant, and even saves energy by not heating the water.

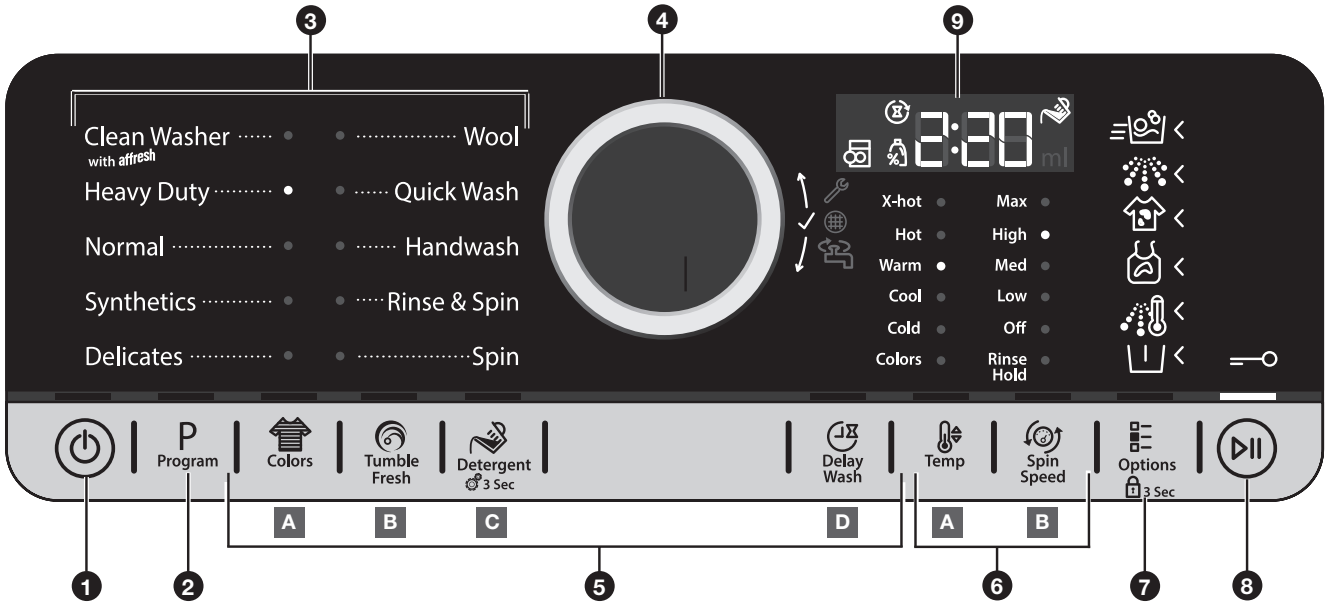
Cold Water PreWash for Stains Option:

Treat everyday tough stains with the Cold water prewash for stains option. It begins with a cold water wash and adds 10 minutes for extra cleaning action.

Detergent Dosing Aid

Stop overdosing detergent and rid clothes of residue. The detergent dosing aid option helps the consumer add the right amount of detergent to provide any load the right clean without the residue.

Control Panel and Features



1 POWER BUTTON
Touch and hold until the indicator above the Program button lights up. The indicators above all the buttons will scroll from left to right as the washer turns on. Symbols appear on the control panel and sounds are played.

Touch and hold POWER to cancel a cycle. “rES” is displayed when the cycle is cancelled.

2 PROGRAM (cycle)
When you turn on the washer, the light above this button will turn on. This indicates you can now select your program or cycle. The program settings which you used last will appear on the control panel.

3 PROGRAM/CYCLE AREA
An indicator next to each program/cycle lights up as you use the knob to scroll through the list. Press the knob when the indicator next to the desired program/cycle lights up.

4 CONTROL KNOB
Turn the knob to select a program/cycle for your laundry load, change program/cycle temperature, adjust spin speed, set delay start time or dosing values, or select Other Options. Press the knob to confirm your selection.

5 OPTIONS
Touch to select additional wash options or additional features on the washer before touching the Start/Pause button. Additional wash options or additional features selected after touching the Start/Pause button may not be activated.

To return to factory default cycle settings, unplug the washer for 30 seconds, then plug back in.

A Colors
This option helps to preserve the colors of your laundry by washing them with cold water 59°F (15°C). Suitable for lightly soiled colored laundry without stains.

B TumbleFresh™ Option
The TumbleFresh™ option will periodically tumble the load after the end of the cycle every 3 minutes for 7 seconds, for up to 6 hours. To turn on the TumbleFresh™ option, touch the TumbleFresh button. If, however, the TumbleFresh™ option is turned on, it will stay on for all future cycles until turned back off – the washer remembers the last on/off status set. To turn off the TumbleFresh™ option, touch the TumbleFresh button.

C Detergent Dosing Aid
This option helps to determine the correct amount of detergent for your laundry load. The concentration of detergents varies considerably, so adjust the amount of detergent as needed. Also check if the washer’s preset water hardness level matches your local water hardness level and adjust it if needed (see the “Using Your Washer” section).

When you touch this button, the Detergent Dosing Aid symbol lights up in the display.

When you touch the Start/Pause button to start the program/cycle, the drum will rotate to detect the load size of the laundry. During load detection, the time display changes from cycle time to a chasing LED animation. The display will then show the recommended detergent amount in milliliters (see Concentration Chart in “About Detergent Concentration”). Use any standard measuring cup to measure out the right detergent amount. After adding detergent, close the detergent dispenser. Touch and hold the Start/Pause button to continue the cycle.

D Delay Wash
This option starts your program/cycle at a later time, up to 24 hours.

6 SETTINGS

A Temperature
This setting lets you change the temperature of the program/cycle selected, if desired.

B Spin Speed
This setting lets you change the spin speed of the program/cycle selected, if desired.

Rinse/Hold
This option will stop at the end of the rinse portion of the cycle and leave the clothes soaking until you touch the Start/Pause button to continue the drain and final spin.

Control Panel and Features

7 OTHER OPTIONS

Save Time
This option enables quicker washing. Only recommended for lightly soiled laundry.

Extra Rinse
This option helps to avoid detergent residues in the laundry by extending the rinse time. Especially suitable for baby laundry, people with allergies, or areas with soft water.

Heavy Soil
This option optimizes the stain-removal efficiency of additives. Ideal for heavily soiled, stained laundry. Add an appropriate amount of powder in-wash additive for stain removal to the main wash compartment, together with your detergent (powder only). This may extend the program by up to 15 minutes. Appropriate for use with oxygen-based stain removers.

IMPORTANT: Chlorine or perborate bleach agents must not be used.

Cold Water PreWash for Stains
This option helps remove all kinds of stains (except grease/oil) by beginning with a cold water wash and adding 10 minutes to the cycle.

NOTE: Pretreatment is recommended for stubborn stains.

Warm Rinse
This option ends with a warm rinse. This rinse relaxes the fibers of your laundry to make it feel comfortably warm when removed soon after the program/cycle ends.

PreWash
This option helps to clean heavily soiled laundry by adding a 20-minute prewash to the program/cycle selected.

Control Lock
This option allows you to lock the buttons and knob to avoid unwanted use by small children or other unqualified persons. Touch and hold the Option button until the “key” symbol lights up. All controls will be locked except for the Power button. To cancel Key Lock, touch and hold the Option button until the key symbol goes off.

8 START/PAUSE BUTTON

Touch to start, or touch and hold to pause, a program/cycle. When you start a program/cycle, the display shows an animation of chasing LEDs. This indicates the washer is estimating dry load size. Once the load size is estimated, water will be added to start the wash cycle.

9 LED DISPLAY

When you select a program/cycle, its default settings will light up and the Estimated Time Remaining will be displayed. Factors such as load size, wash temperature, and water pressure may affect the time shown in the display. Tightly packing, unbalanced loads, or excessive suds may cause the washer to lengthen the program/cycle time, as well.

Symbols

Door can be opened.

Water supply is inadequate.

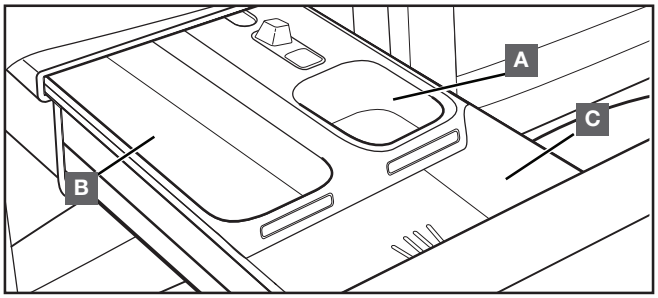
Water cannot be drained. Drain pump filter, drain hose, or pump may be blocked. Check drain hose for kinks or clean the filter as shown in “Washer Maintenance.”

Call for service.

Dosing aid symbols.

Dispenser Drawer

The dispenser drawer gives you the convenience of adding HE detergent and liquid fabric softener to the wash load at the proper time. See “Using the Dispenser Drawer” for information on using the dispenser drawer.



A Liquid fabric softener compartment
Automatically dilutes and dispenses liquid fabric softener at the optimum time in the cycle.
- Use only liquid fabric softener in this dispenser.

B Prewash compartment
When using the PreWash option, add detergent here or directly into the drum.

C Main wash compartment
This compartment holds liquid or powdered HE detergent for your main wash cycle. If PreWash detergent has been added to the drum, use powdered detergent in the main wash compartment; this ensures that the detergent stays in the detergent dispenser until the start of the main wash phase.

IMPORTANT: Do not use chlorine bleach in this washer.

Washer Maintenance

Water Inlet Hose

Replace inlet hose after 5 years of use to reduce the risk of hose failure. Periodically inspect and replace inlet hose if bulges, kinks, cuts, wear, or leaks are found.

When replacing your inlet hose:

- Mark the date of replacement on the label with a permanent marker.
- Check that the old washer is not stuck on the washer inlet valve.
- Use a new washer in the new inlet hose to ensure a proper seal.

Washer Care

Recommendations to Help Keep Your Washer Clean and Performing at Its Best

1. Always use High Efficiency (HE) detergents and follow the HE detergent manufacturer's instructions regarding the amount of HE detergent to use. Never use more than the recommended amount because that may increase the rate at which detergent and soil residue accumulate inside your washer, which in turn may result in undesirable odor.
2. Use warm or hot water washes sometimes (not exclusively cold water washes), because they do a better job of controlling the rate at which soils and detergent accumulate.
3. Always leave the washer door slightly ajar between uses to help dry out the washer and avoid the buildup of odor-causing residue.
4. Periodically clean residue from all interior surfaces of the glass window. For better care, wipe the entire inside of the glass door with a damp cloth.

Cleaning Your Front-Loading Washer

Read these instructions completely before beginning the routine cleaning processes recommended below. This Washer Maintenance Procedure should be performed, at a minimum, once per month or every 30 wash cycles, whichever occurs sooner, to control the rate at which soils and detergent may otherwise accumulate in your washer.

Cleaning the Door Seal

1. Open the washer door and remove any clothing or items from the washer.
2. Inspect the seal between the door opening and the drum for stained areas or soil buildup. Pull back the seal to inspect all areas under the seal and to check for foreign objects.
3. If stained areas or soil buildup are found, wipe down these areas of the seal using the following procedure:

When the cycle is complete, gently pull back the rubber door seal and clean the entire surface with the textured side of an affresh® Machine Cleaning Wipe.

Cleaning the Inside of the Washer

This washer has a special cycle that uses higher water volumes in combination with affresh® Washer Cleaner to thoroughly clean the inside of the washer. Steam washer models also utilize steam to enhance cleaning in this special cycle.

NOTE: Read these instructions completely before beginning the cleaning process.

Begin procedure

Clean Washer with affresh® Cycle Procedure (Recommended for Best Performance):

a. Open the washer door and remove any clothing or items.
b. Use an affresh® Machine Cleaning Wipe or a soft, damp cloth or sponge to clean the inside door glass.
c. Add an affresh® Washer Cleaner tablet to the washer drum.
d. Do not add the affresh® Washer Cleaner tablet to the dispenser drawer.
e. Do not add any detergent or other chemical to the washer when following this procedure.
f. Close the washer door.
g. Select the Clean Washer with affresh® cycle.
h. Select the TumbleFresh™ option to help dry the washer interior after the cycle is complete.

   NOTE: The washer remembers your last option selection and will use it for future wash cycles until you deselect that option.
i. Touch the Start/Pause button to begin the cycle. The Clean Washer with affresh® Cycle Operation is described below.

Description of Clean Washer with affresh® Cycle Operation:

1. Do not run this cycle with a load. Doing so could damage the items.
2. After the cycle is complete, leave the door open slightly to allow for better ventilation and drying of the washer interior.

Cleaning the Dispensers

After a period of using your washer, you may find some residue buildup in the washer's dispensers. To remove residue from the dispensers, remove the drawer and wipe the surfaces with an affresh® Machine Cleaning Wipe or a damp cloth and towel dry either before or after you run the Clean Washer with affresh® cycle. Use an all-purpose surface cleaner, if needed.

IMPORTANT: Dispenser is not dishwasher safe.

Cleaning the Outside of the Washer

Use an affresh® Machine Cleaning Wipe or a soft, damp cloth or sponge to wipe up any spills. Occasionally wipe the outside of your washer to help keep it looking new. Use an affresh® Machine Cleaning Wipe or mild soap and water.

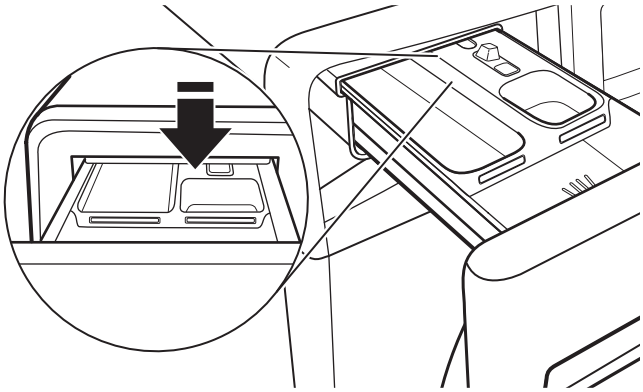
IMPORTANT: To avoid damaging the washer's finish, do not use abrasive products.

Washer Maintenance

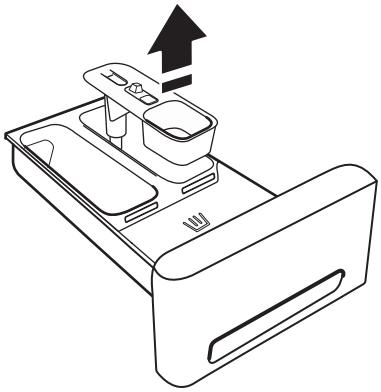
Removing the Dispenser

To remove:

1. Pull dispenser drawer out until it stops.
2. Press down on the release tab and pull straight out to remove the dispenser.

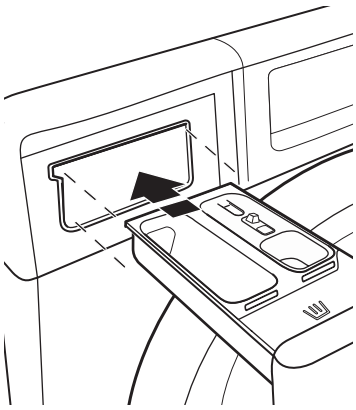


3. Lift off cover panel by pulling straight up.



To replace:

1. Slide cover panel back onto posts on dispenser.
2. Align edges of dispenser with guides in washer, then slide dispenser back into slot.



Non-Use and Vacation Care

Operate your washer only when you are home. If moving, or not using your washer for a period of time, follow these steps:

1. Unplug or disconnect power to washer.
2. Turn off water supply to washer to avoid flooding due to water pressure surges.

   HELPFUL TIP: Attach a reminder note to the washer to turn the water back on before washer's next use.
3. Clean the dispensers. See "Cleaning the Dispensers."

Winter Storage Care

IMPORTANT: To avoid damage, install and store washer where it will not freeze. Because some water may stay in hoses, freezing can damage washer. If storing or moving during freezing weather, winterize your washer.

To winterize washer:

1. Shut off water faucet, disconnect and drain water inlet hose.

   HELPFUL TIP: Attach a reminder note to the washer to turn the water back on before washer's next use.
2. Put 1 qt. (1 L) of R.V.-type antifreeze in washer drum and run washer on Normal cycle for about 2 minutes to mix antifreeze and remaining water.
3. Unplug washer or disconnect power.

Transporting Your Washer

1. Shut off water faucet. Disconnect and drain water inlet hose.
2. If washer will be moved during freezing weather, follow "Winter Storage Care" directions before moving.
3. Disconnect drain hose from drain system and from back of washer.
4. Unplug power cord.
5. Place inlet hose and drain hose inside washer drum.
6. Bundle power cord with a rubber band or cable tie to keep it from hanging onto the ground.

IMPORTANT: Call for service to install new transport bolts.

Do not reuse transport bolts. Washer must be transported in the upright position. To avoid structural damage to your washer, it must be properly set up for relocation by a certified technician.

Model/Serial Number Label & Tech Sheet Location



Model & Serial Number Nomenclature

MODEL NUMBER W F W 3090 G W 0

INTERNATIONAL SALES OR MARKETING CHANNEL

BRAND
W = Whirlpool

ACCESS
F = Front Load

PRODUCT
W = Washer

FEATURE SET
3090 = 1.9 Cu Ft, 24”
5090 = 2.3 Cu Ft, 24”

YEAR OF INTRODUCTION
G = 2017

COLOR CODE
W = White

ENGINEERING CHANGE
0 = Basic Release; 1 = First Revision; 2 = Second Revision

SERIAL NUMBER C F 6 25 10000

PRODUCTION SITE
C = CLYDE, OH

SOURCE PRODUCTION
F = Whirlpool Naples, Italy

YEAR OF PRODUCTION
6 = 2016, 7 = 2017

WEEK OF PRODUCTION
2 Digits that represent the week of the year

PRODUCT SEQUENCE NUMBER
5 Digits that represent the unique product number

Cleaning the Drain Pump Filter/Draining Residual Water

⚠ WARNING



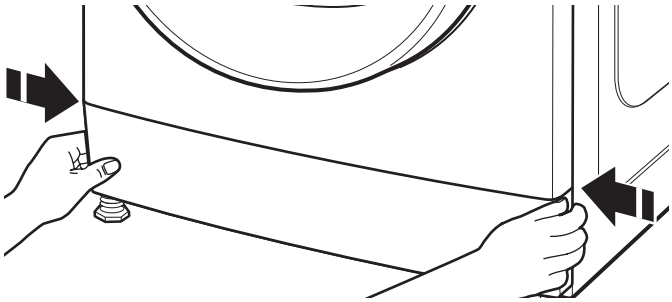
Electrical Shock Hazard

Disconnect power before servicing.

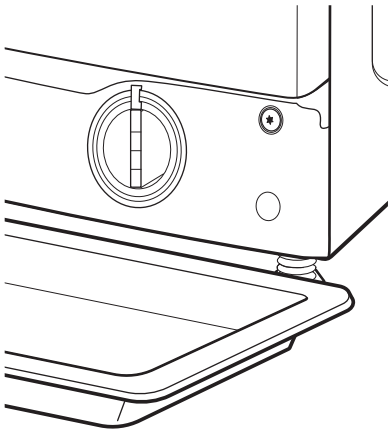
Replace all parts and panels before operating.

Failure to do so can result in death or electrical shock.

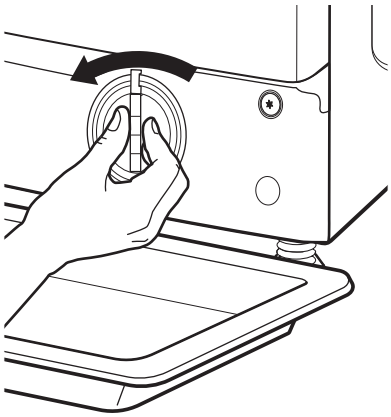
1. Push the tabs located on both sides of the base panel to release it, then remove.



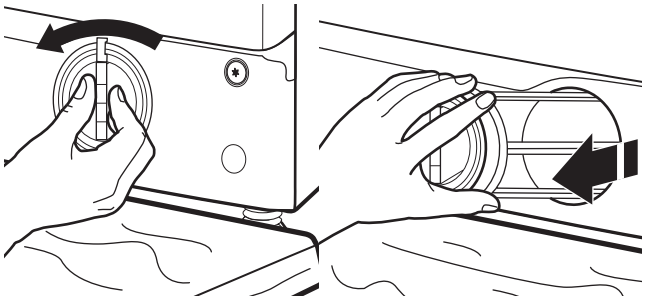
2. Place a broad, flat container beneath the drain pump filter to collect the drain water.



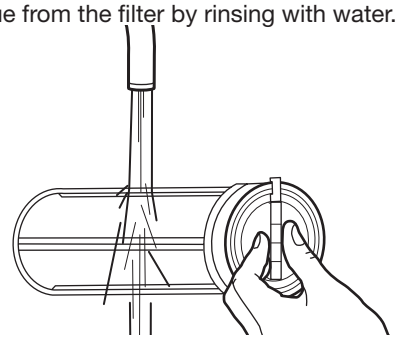
3. Slowly turn the filter counterclockwise until water flows out. Let the water flow out, without removing the filter. When the container is full, close the drain pump filter by turning it clockwise. Empty the container. Repeat this procedure until all the water has drained.



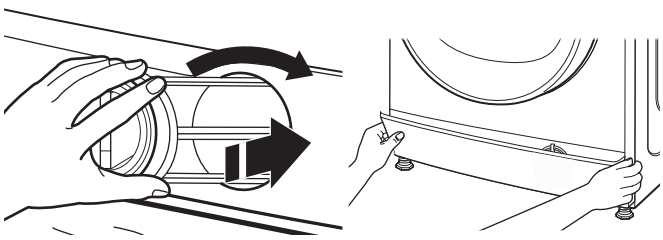
4. Lay a cotton cloth beneath the drain pump filter to absorb any water still in it. Then remove the drain pump filter by turning it counterclockwise.



5. Remove residue from the filter by rinsing with water.



6. Reinsert the drain pump filter by turning it clockwise. Make sure to turn it in as far as it will go, with the filter handle left in a vertical position. To test water tightness of the drain pump filter, pour about 1 liter of water into the detergent dispenser. Then reinstall the base panel.



Product Specifications

ELECTRICAL	
Line Voltage :	120 VAC
Frequency :	60 Hz
Amps :	20A
Low Volts Power Supply :	+15V, +5V
DETAILS	
Capacity :	WFW3090GW = 1.9 Cu Ft WFW5090GW = 2.3 Cu Ft
Size :	24”
Motor Drive Type :	Direct Drive
Motor Horsepower :	1/2 HP
Stackable :	Yes
Drum Material :	Stainless Steel
Control :	Front Panel / Electronic
FEATURES	
Automatic Load Size Sensing :	Yes
Dispense System :	Detergent / Fabric Softener
Internal Heater :	Yes
Out of Balance Sensing :	Yes
Suspension System :	2 Springs, 3 Dampers
Cycles :	(10) Clean Washer, Delicates, Hand Wash, Heavy Duty, Normal, Quick Wash, Rinse & Spin, Spin Only, Synthetics, & Wool
Wash/Rinse Temperatures :	(Rinse) Cold (Wash) Cold, Cool, Colors, Warm, Hot, Extra Hot
Spin :	(5) High, Low, Max Extract, Medium, Off
OPTIONS	
Delay Start :	Up to 20 hours
Pre Soak :	Yes
Washer Option Selections :	Cold Water Pre Wash for Stains Delay Wash, Detergent Dosing Extra Cold Rinse, Extra Warm Rinse Heavy Soil, Pre Wash, Save Time
DIMENSIONS	
Depth :	24”
Height :	33.25”
Width :	24”
Net Weight :	168 lbs.
ACCESSORIES	
Stack Kit :	W10882520
Pedestal, 12” :	WFP24GW

Notes

Section 2: Diagnostics & Troubleshooting

This section provides diagnostic, fault codes, and troubleshooting information for the “Whirlpool Compact Front Load Washer.”

- Manually Unlocking the Door Lock System
- Control Panel
- Abbreviations
- Diagnostic Guide
- Service Diagnostic Mode
- Activating Service Diagnostic Mode
- Service Test Cycle
- Service Test Cycle Chart
- Fault/Error Codes
- Troubleshooting Guide

For Service Technician Use Only

⚠ WARNING



Electrical Shock Hazard

Disconnect power before servicing.

Replace all parts and panels before operating.

Failure to do so can result in death or electrical shock.

MANUALLY UNLOCKING THE DOOR LOCK SYSTEM

1. Unplug washer or disconnect power.
2. Remove the base panel at the bottom front of the washer.
3. Pull the ring-shaped tab protruding at the lower right corner of the washer (see Figure 1).
4. The door may be opened.

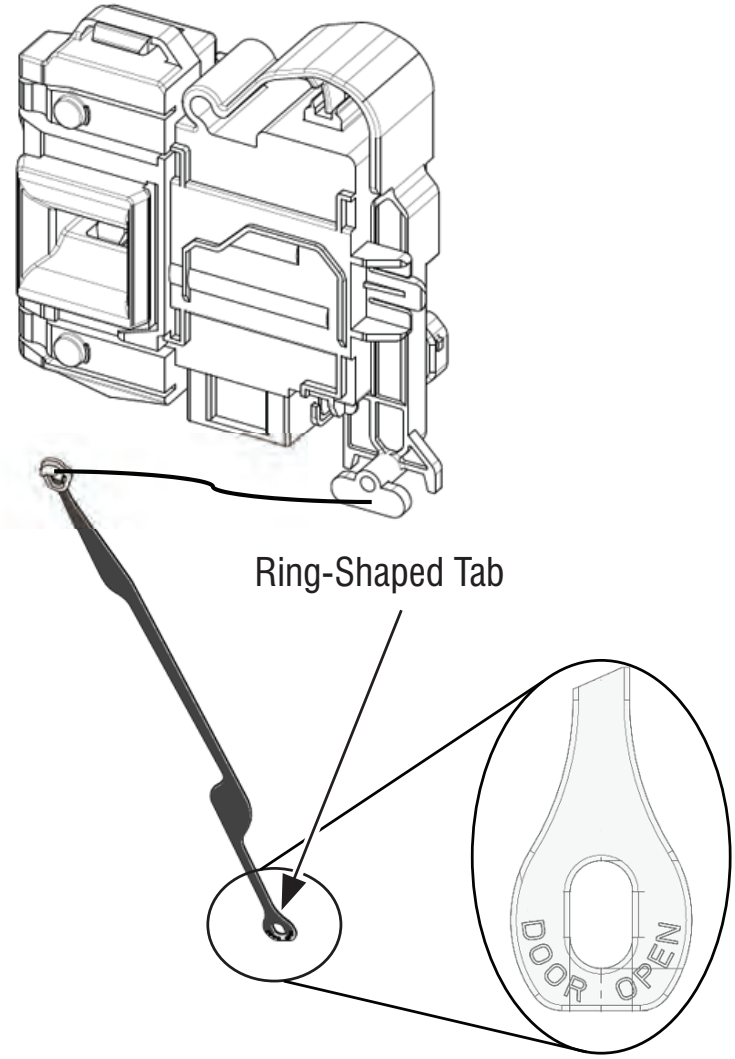


Figure 1 - Door Lock Assembly

CONTROL PANEL (buttons to use when entering Service Diagnostic Mode/Service Test Cycle



1. POWER button: press and hold until display turns on (indicator above the Program button lights. The indicators above all the buttons scroll from left to right as the washer turns on. Symbols appear on the control panel and sounds are played).

2. DELAY WASH and OPTIONS buttons: press DELAY WASH 4 times within 5 seconds while pressing and holding OPTIONS button to enter **Service Diagnostic Mode.**

3. START/PAUSE button: press and hold to run **Service Test Cycle.**

Figure 2 - User Interface

For Service Technician Use Only

ABBREVIATIONS

ACU: Appliance Control Unit

UI: User Interface (PCB & housing)

ICONS

Door is unlocked (door lock failure)

Water supply is inadequate

Water cannot be drained

Service is needed

DIAGNOSTIC GUIDE

Before servicing, check the following:

- Make sure there is power at the wall outlet.
- Has a household fuse blown, or circuit breaker or GFCI tripped? Was a regular fuse used? Inform customer that a time-delay fuse is required.
- Is cold water faucet open and water supply hose unobstructed?
- Make sure drain hose is not sealed into drain pipe, and that there is an air gap for ventilation.
- All tests/checks should be made with a VOM (volt-ohm-milliammeter) or DVM (digital-voltmeter) having a sensitivity of 20,000 Ω per volt DC or greater.
- Resistance checks must be made with washer unplugged or power disconnected.
- **IMPORTANT:** Avoid using large diameter probes when checking harness connectors as the probes may damage the connectors upon insertion.
- Check all harnesses and connections before replacing components. Look for connectors not fully seated, broken or loose wires and terminals, pin insertion, or wires not pressed into connectors far enough to engage metal barbs.
- A potential cause of a control not functioning is corrosion or contamination on connections. Use an ohmmeter to check for continuity across suspected connections.
- **IMPORTANT:** Voltage checks must be made with all connectors attached to the boards.

SERVICE DIAGNOSTIC MODE

Allows service personnel to run the Service Test Cycle to verify inputs to the washer and functionality of the washer control. You may want to do a quick and overall checkup of the washer with this test before going to specific troubleshooting tests.

ACTIVATING SERVICE DIAGNOSTIC MODE

IMPORTANT: Use Service Diagnostic Mode without laundry in the washer.

1. Be sure the washer is in standby mode (plugged in with all indicators off).
2. Open and close the washer door.
3. Press and hold **POWER** until the washer display turns on with indicators scrolling from left to right. When the time remaining display turns on, within 60 seconds:
4. Press and hold **OPTIONS** while pressing **DELAY WASH** 4 times within 5 seconds. The control will enter Service Diagnostic Mode. The display will show “CS” for Service Test Cycle. Rotating the control knob will toggle the display between “CS” (Service Test Cycle) and “CF” (Factory Test Cycle). Select “CS”. Press the flashing **START** button. All display indicators will turn on. **DO NOT SELECT OR RUN “CF” (FACTORY TEST CYCLE). IT REQUIRES THE FACTORY ENVIRONMENT AND TEST EQUIPMENT. IF “CF” IS RUN, IT COULD GENERATE A FALSE FAILURE CODE (F##) THAT WILL BE SAVED TO THE ERROR HISTORY.**

Activation with Saved Fault Codes

If there is a saved fault code, the F number will be shown in the display. Review the Fault/ Error Codes beginning on page 2-6 for the recommended procedure and how to display saved error codes. If there is no saved fault code, “F - -” will be displayed.

Press and hold **START** to run the Service Test Cycle (see this page and 2-5).

To exit Service Diagnostic Mode, turn the control knob or press and hold **POWER**.

NOTE: Service Diagnostic Mode times out after one minute of user inactivity.

Unsuccessful Activation

If entry into Service Diagnostic Mode is unsuccessful, refer to the following indications and actions:

Indication 1: None of the indicators or display turn on.

Action: Make sure AC power is available to the washer. Check user interface operation (see Test #2, page 3-6).

Indication 2: Display is on, but unable to enter Service Diagnostic Mode (Service Diagnostics Mode not entered within 60 seconds of UI turning on).

Action: Press and hold **POWER** to turn off the washer display. Wait 10 seconds. Press and hold **POWER** again to turn on the washer display. Follow the Activating Service Diagnostic Mode instructions on this page.

SERVICE TEST CYCLE

NOTE: The Service Diagnostic Mode must be activated before entering the Service Test Cycle (“CS”); see procedure on this page. If, at any point, the user turns the control knob or presses and holds the POWER button, the washer exits to standby mode.

Active Fault Code Display in Service Test Cycle

Press the flashing **START** button when the display shows “CS”. All indicators turn on and the display shows active fault code “F##”.

Only one active fault code can be displayed at a time. The most recent fault code will be displayed first. Press **START** again to show the next saved fault code. If no additional fault codes are stored, the display shows “F - -”. The fourth press of **START** will begin the Service Test Cycle. Or, press and hold **START** to begin the Service Test Cycle (see chart on next page).

Exit Procedure

To exit the Service Test Cycle, press and hold **POWER** or turn the control knob.

For Service Technician Use Only

SERVICE TEST CYCLE CHART

NOTE: Perform Service Test Cycle without laundry in the washer.

Step	Icon	Description	Checks performed
C00		Door is locked. ACU is performing the self test.	ACU detects F05, F07, F13, F20, F21, F24, F26, F27, F29, F60.
C01		Prewash valve fills for 6 seconds. Main wash valve fills for 6 seconds. Prewash and main wash valves both fill for 16 seconds. Prewash and main wash valves both fill to wash level. Motor turns on.	Verifies activation of valves, dispenser, and pressure sensor. ACU detects F01, F06, F07, F10.
C02		Heating element turns on for 15 seconds. Motor is off. Display shows a measured temperature, e.g., 20C = 20°C (68°F)	Verifies activation of heating element, correct measurement of cold water temperature. **NOTE**: Heating time is very short; no noticeable actual temperature increase.
C03		Drain pump turns on until reaches wash level + 8 seconds. Motor reverses	Verifies activation of drain pump and reversal of motor. ACU detects F03, F06, F07, F15, F26, F27.
C04		Unbalance and load size is measured. Display shows amount of measured unbalance in kg (example: “0:03” = 0.03 kg [30 grams] of unbalance). Motor revs to maximum speed. Drain pump turns on.	Verifies that motor is running at maximum speed. Verifies the displayed unbalance. Verifies activation of drain pump. ACU detects F06, F07, F28, F34.
C05		Motor turns off (brakes). Door is unlocked. Washer turns off.	Verifies unlocking of door and turning off of washer. ACU detects F13, F29 (FdL).

NOTE:

The total duration of the Service Test Cycle is approximately 5 minutes. During the Service Test Cycle, all UI LEDs will be on except for the “door open/door unlocked” LED. The display will show the test step sequence.

Do not skip test steps. Washer must be connected to water supply when performing Service Test Cycle.

The following indicates the basic meaning of each “F##” fault/error code. See the chart beginning on page 3-6 for more details.

F01 = Water flow
F03 = Drain pump
F04 = Heater timeout
F05 = Temperature sensor
F06 = Motor rotor
F07 = Motor control (internal failure)
F10 = Motor control (over temp.)
F13 = ACU door lock
F18 = Suds detected
F20 = Main relay or heater relay
F21 = UI communication
F24 = Overflow
F26 = Drain pump
F27 = Motor
F29 = Door lock
F34 = Motor spin
F36 = Analog pressure sensor
F60 = ACU internal failures

For Service Technician Use Only

⚠ WARNING



Electrical Shock Hazard

Disconnect power before servicing.

Replace all parts and panels before operating.

Failure to do so can result in death or electrical shock.

FAULT/ERROR CODES

(Refer to Fault/Error code charts below and on pages 7–10.)

Fault/Error Code Display Method

Fault codes are displayed by showing F##. The F## indicates the suspect system/category or component.

Up to four (4) Fault/Error codes may be stored. In Service Diagnostic Mode, pressing **START** displays the next saved Fault/Error Code. If the display shows "F - -", no fault codes are present.

NOTE: Fault/Error codes cannot be cleared.

Exit Procedure

To exit Fault/Error Codes Display Mode, turn the control knob or press and hold **POWER**.

Icon Display	Text Display	Explanation and Recommended Procedure
 ("Door Open" icon is flashing or on)	During normal cycle execution: Remaining time During Service Test Cycle: F29 (see *F29* section, page 2-10)	**Door Lock Failure** If the ACU is unable to lock the washer door after start of cycle or if the ACU is unable to detect if the door is locked (after several attempts), the ACU goes to selection mode (Start/Pause button is flashing). **Possible Causes** • Mechanical issue with door/door hook/door lock interface/ hinge/bellow. • Door is not completely closed. Press firmly on the door frame in the area of the door lock. Check if Start/Pause button LED is still flashing. • Door lock issue: See *F29* section, page 2-10.
During normal cycle execution:  During Service Test Cycle: 	During normal cycle execution: Remaining time During Service Test Cycle: F01	**No Water Detected Entering Washer** **Or Pressure Sensor Level Not Detected** If, after about 9 minutes, the control has not detected that water is entering the washer, the valves are turned off and the "Water Faucet" LED turns on. The washer performs a 5 minute drain procedure to avoid flooding in case the water faucet was open, but the pressure sensor did not detect it; a second attempt at filling is performed after user presses Start/Pause again. **Possible Causes** • The control is in pause mode. Press **START** to restart the cycle. If water begins to fill, the cycle will run. • Water supply is not turned on, inlet valves are not functioning, or no water is being detected. **If there is no water in the washer:** • Make sure that the water faucet is turned on fully. • Check for plugged or kinked inlet hoses or plugged inlet valve filters. • Make sure water is not frozen in the inlet hoses. • Check harness connections on valves and ACU. • Verify inlet valve operation. **If there is water in the washer:** • Make sure pressure hose is in good condition and properly connected to the tub and pressure sensor. • Verify that there is not a siphon problem. • Verify wire harness connections to inlet valves, pressure sensor, and ACU. • Check all hoses for possible leaks. • Verify pressure sensor function. • Check the ACU (see TEST #1: ACU Power Check, page 3-4). • Check the air trap and hose connection to pressure sensor.

Continued on following page . . .

For Service Technician Use Only

FAULT/ERROR CODES (Continued)

Icon Display	Text Display	Explanation and Recommended Procedure
During normal cycle execution:  During Service Test Cycle: 	During normal cycle execution: Remaining time During Service Test Cycle: F03	**Long Drain** If the drain time exceeds the drain timeout (4 minutes) before reaching the "Empty" level of the pressure sensor, the "Pump Filter" LED is turned on. **Possible Causes** • The control is in pause mode. Press **START** to continue the cycle. If water drains out, the cycle will continue. • Verify that the drain hose is not plugged or kinked. • Make sure water is not frozen in the outlet hose or drain pump. • Check the drain pump filter for foreign objects. • Check electrical connections at the drain pump and ACU, and verify that the pump is running. • Check the electrical resistance of the drain pump. • Check the ACU (see TEST #1: ACU Power Check, page 3-4). • Too many suds during the wash cycle (also see F18 error). • Check for Eco-Ball blockage. • Check the air trap and hose connection to pressure sensor.
	F04	**Heating Time Too Long** If the water temperature does not reach at least 63°F (35°C) during the first 50 minutes of the heating step in the cycle, the cycle is finished without further heating. This is a delayed error code. User is notified only after the 10th occurrence. **Possible Causes** • Check the electrical resistance of the heater. • Check wire harness connections to the heater, temperature sensor, and ACU. • Check the electrical resistance of the temperature sensor (failure can occur when temperature sensor resistance does not change with temperature). See chart on page 3-14. • Check the ACU (see TEST #1: ACU Power Check, page 3-4).
	F05	**Water Temperature Sensor Error** If the water temperature sensor value is out of range, the cycle will run without heating. If the value is in range, but there is not a change in temperature sensor value of +3.6°F (2°C) during heating detected, the cycle will continue without additional heating. This is a delayed error code. User is notified only after the 10th occurrence. **Possible Causes** • Check the temperature sensor resistance. • Check connections to the temperature sensor and ACU.
Only during Service Test Cycle: 	Only during Service Test Cycle: F06	**Blocked Drum/Motor Overload** The ACU is unable to move the motor or only with difficulty. There will be many attempts to move the motor. The cycle will continue without motor movement or with reduced motor movement. This error code is hidden from the consumer. **Possible Causes** • Check the wire harness and connections between the motor and ACU. • Check the drum for mechanical friction (move the drum slowly and very briefly). • Check for trapped laundry. • Check the resistance of the motor windings.

Continued on following page . . .

For Service Technician Use Only

FAULT/ERROR CODES (Continued)

Icon Display	Text Display	Explanation and Recommended Procedure
	F07	**Motor Control Internal Failure** The ACU may have detected damage to the motor. **Possible Causes** • Check ACU by running Service Test Cycle: if failure occurs, replace the ACU. • Motor or motor control over-temperature. • Check the resistance of the motor windings. • Check the wire harness and connections between the motor and ACU.
Only during Service Test Cycle: 	Only during Service Test Cycle: F 10	**Drum Overload (Over-temperature)** The ACU has detected a temperature that is too high. This error code is hidden from the consumer. The cycle will continue with reduced or no motor movement. This error code is normally not visible during the Service Test Cycle because it is the result of a motor that has been running for a long time under heavy load. **Possible Causes** • Check the drum for mechanical friction (move the drum slowly and very briefly). • Check for trapped laundry. • Check for noise or friction during drum rotation. • Check if the washer was overloaded. • Check if the washer ran several consecutive and/or long cycles. • Make sure the ambient temperature of the laundry area is not too high. • Make sure that the washer installation is correct, particularly if the washer is built-in. • Check motor for a defect (see *F06* section). • Check the ACU (see TEST #1: ACU Power Check, page 3-4).
 (Eventually the "Door Open" icon will also be on)	F 13	**ACU Failure On Door Lock Control Circuit** If the ACU detects a defect of the door lock triac or switch, F13 is displayed. This check is done at the start of a cycle and at the end of a cycle. **Possible Causes** • Check the wiring and harness between the ACU and the door lock. • Check if the door contact of the door lock is closed when the door is closed. • Make sure the door lock can lock and unlock (see *F29* section). • Check the ACU (see TEST #1: ACU Power Check, page 3-4).
	F 18 **or** FoD	**Suds (Foam) Detected During Wash Cycle** If the washer is unable to drain the water after the wash cycle, or unable to spin after several attempts, this error code is displayed. **Possible Causes** • Consumer used too much detergent. • Check for a problem with the pump hoses. • Check drain pump for foreign objects. • Check the electrical resistance of the drain pump. • Check pressure sensor function. • Verify that pressure hose is in good condition and properly connected to the tub and pressure sensor. • Verify that there is not a siphon problem. • Check the air trap and hose connection to pressure sensor. • Check all possible causes in *F03* section.

Continued on following page . . .

For Service Technician Use Only

FAULT/ERROR CODES (Continued)

Icon Display	Text Display	Explanation and Recommended Procedure
	F20	**ACU Failure (Or Heater Failure)** The ACU has detected that the main or heater relay has a short or open circuit, or that the heater has an open circuit. **Possible Causes** • Verify that the heater is OK by checking the resistance of the heater connections (L1 and N), and then checking the resistance of the heater (L1 and N). If the heater has reduced resistance of L1 or N, replace the heater and run the Service Test Cycle. If the heater has an open circuit, replace the heater and the ACU. • Check the connections on the heater and ACU and check the wires. If the heater and wires are OK, replace the ACU.
	F21	**User Interface Communication Error** If the communication between the user interface module and the ACU is disturbed, this error code will be displayed. **Possible Causes** • Check the wiring connection to the user interface. • Check the user interface. • Check the ACU (see TEST #1: ACU Power Check, page 3-4).
	F24	**Overflow Failure** If the ACU has read an overflow level on the pressure sensor, the drain pump is turned on for one minute. The wash cycle will continue. The overflow failure condition is reached if the overflow signal is detected five times in the same wash cycle. In an overflow condition, the door will remain locked and the drain pump will run intermittently. **Possible Causes** • Wash cycle with high water level was used with too many items/garments. • Make sure that the drain hose is not plugged or kinked. • Check the wire harness connections to the drain pump, pressure sensor, and ACU. • Make sure that the inlet valve is shutting off properly. • Check the drain pump filter for foreign objects and clean, if necessary. • Check for drain pump failure. • Check the pressure sensor for proper operation.
	F26	**Pump Driver Failure** If, during the wash cycle, the ACU detects that the pump triac is defective, it will display this error code. **Possible Causes** • Run the Service Test Cycle to check the ACU. If the failure occurs, replace the ACU. • Check the drain pump. • Check the drain pump resistance (resistance too low can cause overcurrent of drain pump, damaging the pump driver).

Continued on following page . . .

FAULT/ERROR CODES (Continued)

Icon Display	Text Display	Explanation and Recommended Procedure
	Only during Service Test Cycle: F27	**Motor Phase Loss** The ACU detected an open circuit in one of the motor phases or in the harness connection to the motor. The motor cannot turn; the wash cycle will continue without motor movement or with reduced motor movement. This error code is hidden from the consumer. **Possible Causes** • Check the motor harness. • Check the motor. • Check the ACU (see TEST #1: ACU Power Check, page 3-4).
	F29 **or** FdL	**Door Lock Cannot Unlock, Door Lock Blockage (In Service Test Cycle: Door Lock Cannot Lock)** **Possible Causes** • Check for a mechanical problem in the door lock system (also check the door itself, hinge, bellow, and door latch). • Check the wiring/harness between the ACU and the door lock. • Check if the bellow is properly mounted (door lock will get wet if bellow is improperly mounted). • Press firmly on door frame in the area of the door lock, and try to lock/unlock the door. • Start the Service Test Cycle. If the door lock problem persists, *F29* or *FdL* will be displayed. **NOTE:** If the ACU is unable to unlock the door, use the manual unlocking procedure (see page 2-2). In some cases (power supply interruption or failure of certain electrical components), the door will remain locked as a safety precaution; use the manual unlocking procedure.
	Only during Service Test Cycle: F34	**Maximum Spin Speed Not Reached** If, during the spin step "C04" of the Service Test Cycle, the attained spin speed is not at least 90% of the maximum spin speed, this error code will be displayed. This error code will not display during the wash cycle. **Possible Causes** • Too many items in load. • Check the items listed in *F06* error code section (Blocked Drum/Motor Overload).
	F36	**Water Level Sensing Not Functioning** Pressure sensor failure detected (no signal, signal out of range, or zero offset is too high). **Possible Causes** • Check wiring harness to the pressure sensor and ACU. • Check the pressure hose. • Check for blocked pump filter (check all items listed in *F03* error code section [Long Drain]). • Check the air trap and hose connection to pressure sensor. • Run the Service Test Cycle. If the error code persists, *F36* will be displayed.
	F60	**ACU Failure/Microprocessor Failure** An internal failure of the microprocessor has been detected. **Possible Causes** • Check the ACU by running the Service Test Cycle. • If failure occurs, replace the ACU.

For Service Technician Use Only

Troubleshooting Guide

NOTE: Always check for error codes first (pages 2-6 to 2-10)

Some tests will require accessing components. See Section 4, "Component Access" for component locations. For detailed testing procedures, refer to Section 3, "Component Testing."

Problem	Possible Cause	Checks & Tests
Won't Power Up • No operation • No keypad response • No LEDs or display	No power to washer.	Check power at outlet, check circuit breakers, fuses, or junction box connections.
	Connection problem between AC plug and main ACU.	Check connections between the AC power cord and ACU for continuity.
	Connections between ACU and UI.	Check connections and harness continuity between the ACU and UI.
	User Interface problem.	See TEST #2: User Interface, page 3-6.
	ACU problem.	See TEST #1: ACU Power Check, page 3-4.
Won't Start Cycle No response when START is pressed	Control lock is activated.	Check if the control lock icon above the Start button is on. If so, press and hold to deactivate it.
	Door lock mechanism not functioning.	1. Door not closed due to interference. 2. Lock not closed due to interference. 3. See TEST #4: Door Lock System, page 3-9.
	Connections between ACU and UI.	Check connections and harness continuity between ACU and UI.
	User Interface problem.	See TEST #2: User Interface, page 3-6.
	ACU problem.	See TEST #1: ACU Power Check, page 3-4.
UI Won't Accept Selections	Control lock is activated.	Check if the control lock icon above the Start button is on. If so, press and hold to deactivate it.
	Connections between ACU and UI.	Check connections and harness continuity between ACU and UI.
	User Interface problem.	See TEST #2: User Interface, page 3-6.
	ACU problem.	See TEST #1: ACU Power Check, page 3-4.
Door Won't Lock	Door not closed.	Ensure that door is completely closed.
	Door lock obstructed.	Check mechanism for obstruction.
	Door lock mechanism not functioning.	See TEST #4: Door Lock System, page 3-9.
Door Won't Unlock (See page 2-2 for manually unlocking the door lock system.)	Reset washer.	Unplug the washer, wait 30 seconds, and reconnect the power cord. Wait 2 minutes to see if the washer door unlocks.
	Misaligned, broken, or over-tightened door latch.	Check door lock mechanism and repair as necessary.
	Door lock mechanism not functioning.	See TEST #4: Door Lock System, page 3-9.
Won't Dispense	No water supplied to washer.	1. Check water connections to washer. 2. Verify that water supply is turned on.
	Dispenser clogged with detergent.	Clean obstruction from dispenser.
	Valve problem	See TEST #5: Water Inlet Valve, page 3-10.
	Dispenser system problem.	See TEST #10: Dispenser System, page 3-15.

Continued on following page . . .

For Service Technician Use Only

Troubleshooting Guide (continued)

Problem	Possible Cause	Checks & Tests
Won't Fill	No water supplied to washer or low water pressure.	1. Check water connections to washer. 2. Verify that water supply is turned on.
	Plugged filter/screen, or plugged air trap.	Check for plugged filter or screen in the water valve or hose. Remove the air trap and check for any trapped lint or material.
	Drain hose installation.	Check for proper drain hose installation. Is water siphoning out of the drain hose?
	Valve problem.	See TEST #5: Water Inlet Valve, page 3-10.
	Water level sensor problem.	See TEST #6: Water Level Sensor, page 3-11.
Overfills	Drain hose/filter or air trap is plugged.	Check for hose, drain filter, and air trap obstructions.
	Valve not shutting off.	See TEST #5: Water Inlet Valve, page 3-10.
	Water level sensor problem.	See TEST #6: Water Level Sensor, page 3-11.
	Drain pump problem.	See TEST #7: Drain Pump, page 3-12.
Drum Won't Rotate	Door is not locked. Is door locking after starting a cycle?	Verify harness connections and see TEST #4: Door Lock System, page 3-9.
	Garment or mechanical obstruction between drum and tub.	Try to move the drum while the washer is unpowered to see if it can move freely. If not, check for a garment or other object obstructing movement.
	Harness connections.	Check harness continuity and connections between ACU and motor.
	Motor problem.	See TEST #3: Motor Circuit, page 3-8.
Motor Overheats	Mechanical friction.	Check for obstruction between spin basket and outer tub.
	Harness connections.	Check harness continuity and connections between ACU and motor.
	Motor problem.	See TEST #3: Motor Circuit, page 3-8.
Won't Drain	Drain hose installation.	Reduce drain height if it is >49". Make sure drain hose is not inserted more than 4.5" (114 mm). Make sure drain hose is not sealed into drain pipe, and that there is an air gap for ventilation.
	Plugged drain hose or air trap.	Check drain hose and air trap for obstructions.
	Obstructions to drain pump.	Check and clean drain filter of obstructions.
	Harness connections.	Check harness continuity and connections between ACU and drain pump.
	Drain pump problem.	See TEST #7: Drain Pump, page 3-12.
Incorrect Water Temperature	Heating element problem.	See TEST #8: Heating Element, page 3-13.
	Temperature sensor problem.	See TEST #9: Temperature Sensor, page 3-14.
Leaking	Supply hose connection.	Check hose connection and for damage to rubber gasket due to over-tightening.
	Drain hose installation.	Check for proper drain hose installation.
	Plugged drain hose or house drain pipe.	Check drain hose for obstructions and make sure house drain pipe is not blocked.
	Overloading the washer.	Overloading can partially push the door open.
	Internal hose connections.	Check internal hose connections for leakage.
	Check bellow.	Check for holes in the bellow. If there are none, remove, reposition, and reinstall the bellow. Make sure the bellow is not wrinkled.

Continued on following page . . .

For Service Technician Use Only

Troubleshooting Guide (continued)

Problem	Possible Cause	Checks & Tests
Leaking (continued)	Dispenser leaking.	Check the dispenser for leakage from the front and from the plastic box itself.
	Ventilation tube leaking.	Make sure that the ventilation tube is installed properly.
	Heater leaking.	Make sure heater is seated and torqued down properly.
Vibration or Noise	Heater is loose.	Make sure heater is torqued down properly.
	Shipping kit not removed.	Verify that shipping bolts and spacers are removed.
	Washer not level.	Level washer per installation instructions.
	Floor stability.	Weak floors can cause vibration and walking of the washer.
	Leveling lock nuts not tightened.	Tighten leveling lock nuts.
	Clogged inlet screen making high-pitched noise.	Disconnect hose and clean screen.
	Spring/damper installation.	Check for proper spring and damper placement and installation.
	Washer panel noise.	Inspect washer panels for bending, warpage, or damage. Check for loose fasteners.
	Ventilation hose becoming disconnected.	Verify connection of ventilation hose.
	Water level sensor hose slapping on the tub.	Make sure the hose is fastened properly.
Poor Wash Performance Please reference Use & Care Guide	Oversuds.	1. Verify use of HE detergent. 2. Excessive detergent usage. 3. Check drain hose and filter for obstructions.
	Incorrect water level.	See “WON’T FILL”, page 2-12.
	Clothes wet after cycle is complete.	1. Single or tangled items in the washer. Unbalanced load. 2. Oversuds (see above). 3. Use the recommended cycle/spin speed for your garment. 4. See “WON’T DRAIN”, page 2-12.
	Load not rinsed.	1. Check proper water supply. 2. Not using HE detergent. 3. Verify that load is not bunched or bundled when placed in washer. 4. See TEST #5: Water Inlet Valve, page 3-10.
	Not cleaning clothes.	1. Verify that load is not bunched or bundled when placed in washer. 2. Not using HE detergent. 3. Not using correct cycle. 4. Not using dispensers.
	Fabric damage.	1. Washer overloaded. 2. Sharp items in tub.
	Wrong option or cycle selection.	Refer customer to “Use & Care Guide”.

Notes

Section 3: Component Testing

This section provides a wiring diagram, control board specifications, testing procedures and strip circuits for the "Whirlpool Compact Front Load Washer."

- Testing: Safety Information
- Wiring Diagram
- Component Testing
- TEST #1: ACU Power Check
- TEST #2: User Interface (UI)
- TEST #3: Motor Circuit
- TEST #4: Door Lock System
- TEST #5: Water Inlet Valve
- TEST #6: Water Level Sensor (APS)
- TEST #7: Drain Pump
- TEST #8: Heater Element
- TEST #9: Temperature Sensor
- TEST #10: Dispenser System
- TEST #11: Equalization Tank/Drain Hose

For Service Technician Use Only

⚠ DANGER



Electrical Shock Hazard

Only authorized technicians should perform diagnostic voltage measurements.

After performing voltage measurements, disconnect power before servicing.

Failure to follow these instructions can result in death or electrical shock.

⚠ WARNING



Electrical Shock Hazard

Disconnect power before servicing.

Replace all parts and panels before operating.

Failure to do so can result in death or electrical shock.

Voltage Measurement Safety Information

When performing live voltage measurements, you must do the following:

- Verify the controls are in the off position so that the appliance does not start when energized.
- Allow enough space to perform the voltage measurements without obstructions.
- Keep other people a safe distance away from the appliance to prevent potential injury.
- Always use the proper testing equipment.
- After voltage measurements, always disconnect power before servicing.

IMPORTANT: Electrostatic Discharge (ESD) Sensitive Electronics
ESD problems are present everywhere. Most people begin to feel an ESD discharge at approximately 3000V. It takes as little as 10V to destroy, damage, or weaken the main control assembly. The new main control assembly may appear to work well after repair is finished, but a malfunction may occur at a later date due to ESD stress.

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

-OR-

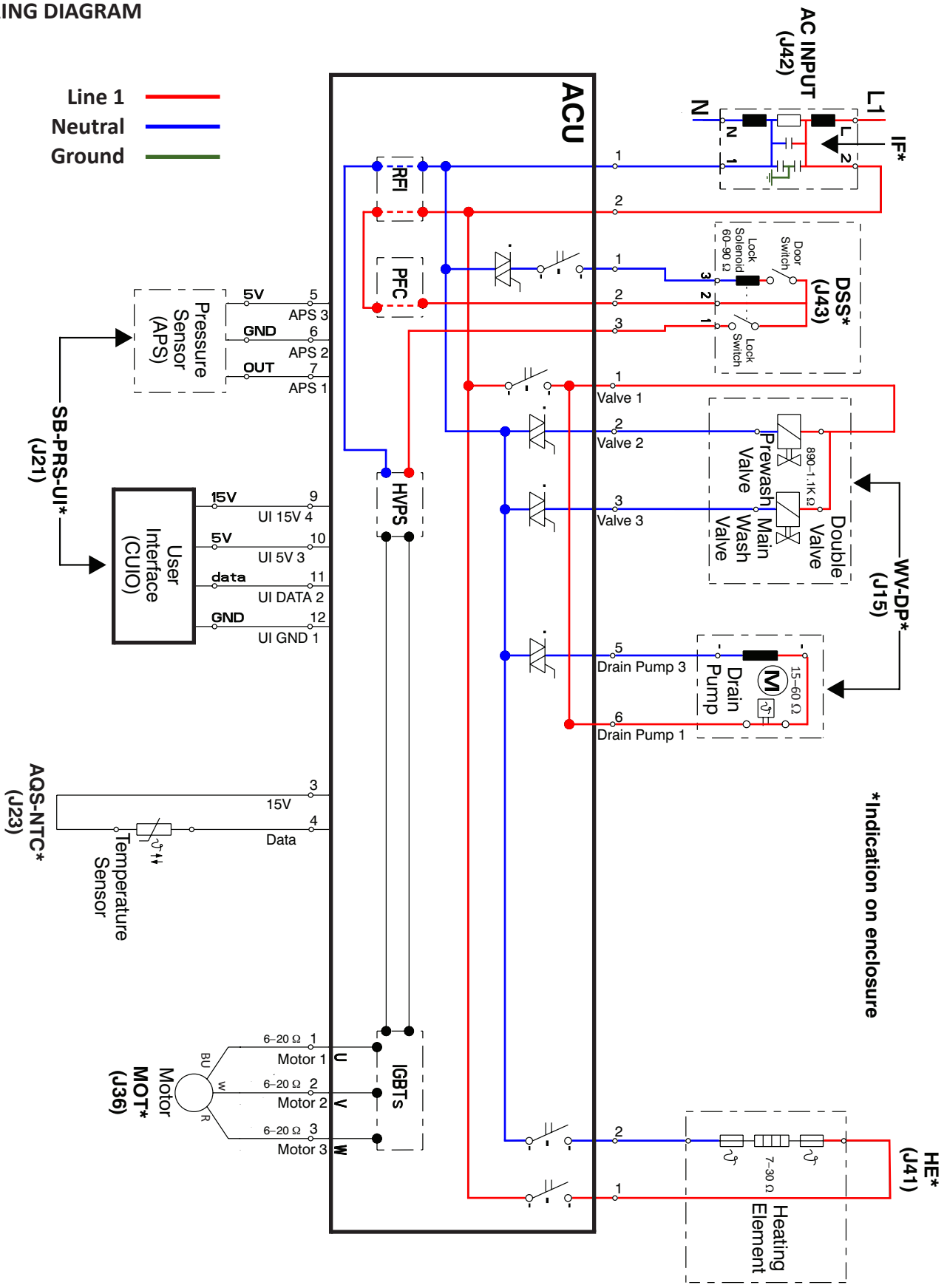
- **Touch your finger repeatedly to a green ground connection point or unpainted metal in the appliance.**
- **Before removing the part from its package, touch the anti-static bag to a green ground connection point or unpainted metal in the appliance.**
- **Avoid touching electronic parts or terminal contacts; handle electronic control assembly by edges only.**
- **When repackaging main control assembly in anti-static bag, observe above instructions.**

IMPORTANT SAFETY NOTICE — "For Technicians only"

This service data sheet is intended for use by persons having electrical, electronic, and mechanical experience and knowledge at a level generally considered acceptable in the appliance repair trade. Any attempt to repair a major appliance may result in personal injury and property damage. The manufacturer or seller cannot be responsible, nor assume any liability for injury or damage of any kind arising from the use of this data sheet.

For Service Technician Use Only

WIRING DIAGRAM



For Service Technician Use Only

⚠ DANGER



Electrical Shock Hazard

Only authorized technicians should perform diagnostic voltage measurements.

After performing voltage measurements, disconnect power before servicing.

Failure to follow these instructions can result in death or electrical shock.

Component Testing

TESTING WASHER COMPONENTS FROM THE CONTROL

Before testing any of the components, perform the following checks:

- The most common cause for mis-diagnosed control failure is poor connections. Therefore, disconnecting, inspecting and reconnecting wires will be necessary throughout test procedures.
- All tests/checks should be made with a VOM or DVM having a sensitivity of 20,000 ohms-per-volt DC, or greater.
- Check all connections before replacing components, looking for broken or loose wires, failed terminals, or wires not pressed into connectors far enough.
- **IMPORTANT:** Voltage checks must be made with all connectors attached to the boards.
- Resistance checks must be made with power cord unplugged or power disconnected, and with wiring harness or connectors disconnected from the control.

The testing procedures in this section may require the use of needle probes to measure voltage. Failure to use needle probes may damage the connectors.

IMPORTANT: Whenever the washer is tilted for service or troubleshooting, drain water from the basket and remove any load items in the basket.

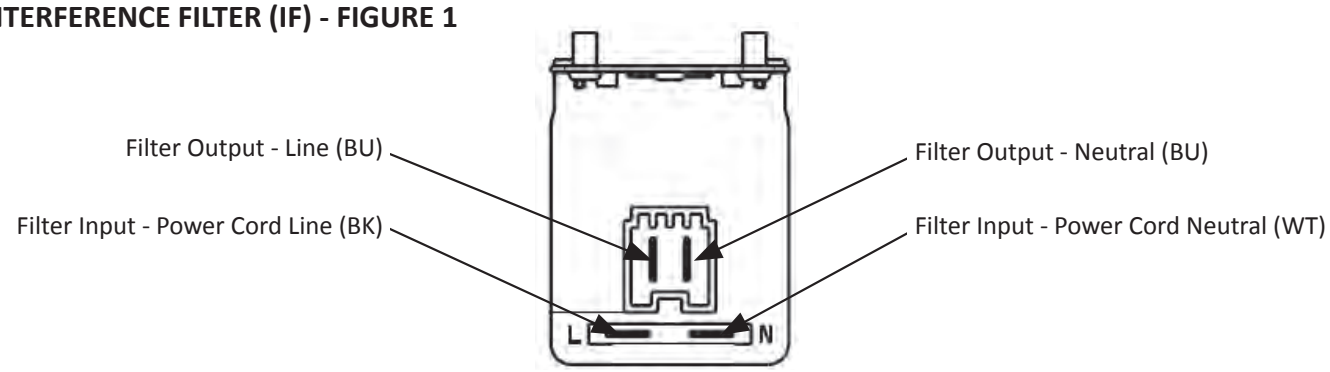
TEST #1: ACU Power Check

This test checks for incoming and outgoing power to and from Appliance Control Unit (ACU). This test assumes that proper voltage is present at the outlet.

1. Unplug washer or disconnect power.
2. Gently lay washer on its right side to access the ACU.
3. Visually check that all connections to the interference filter (IF) are securely connected. See Figure 1, page 3-4.
4. Visually check that all connections to the ACU are fully inserted. See Figure 2, page 3-5.
5. If both visual checks pass, go to step 6.
6. Plug in washer or reconnect power.
7. With a voltmeter set to **AC**, check for line voltage at the input of the interference filter. See Figure 1, page 3-4.
   - ➢ If line voltage is present, go to step 8.
   - ➢ If line voltage is not present, verify the continuity of the power cord. If it fails the continuity check, replace the power cord.
8. With a voltmeter set to AC, check for line voltage at the output of the interference filter. See Figure 1, page 3-4.
   - ➢ If line voltage is present, go to step 9.
   - ➢ If line voltage is not present, replace the interference filter.
9. With a voltmeter set to **AC**, check for input line voltage to the ACU across pins 1 and 2 of connector **J42** AC Input (IF). See Figure 2, page 3-5.
   - ➢ If line voltage is present, go to step 10.
   - ➢ If line voltage is not present, check harnesses and connections between the filter and the ACU. Visually inspect inside connector housing for bent or damaged terminals. Repair as necessary.
10. Check UI input voltage:

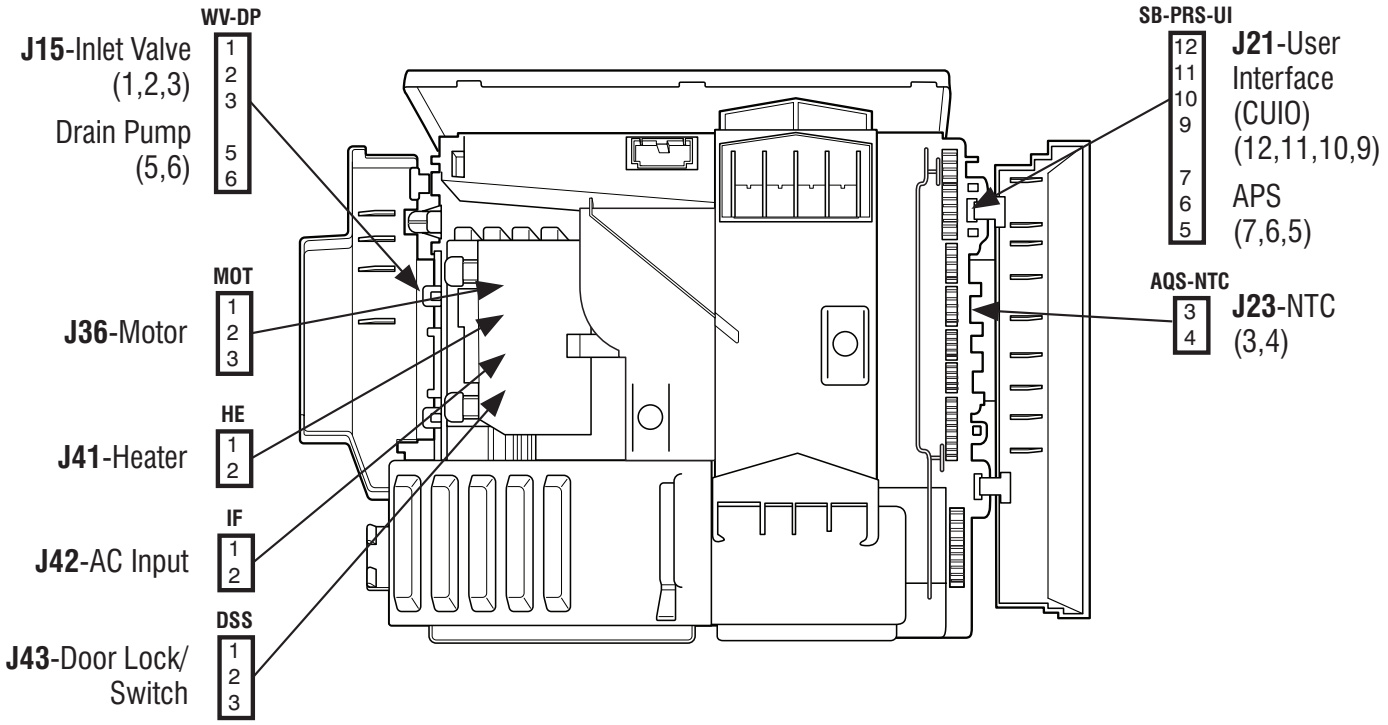
    Verify that there is 5V between pin 10 and 12 at **J21**.
    - ➢ If there is 5V, go to step 11.
    - ➢ If there is not 5V, disconnect **J21** and check for 15V between pin 9 and pin 12. If there is not 15V, replace the ACU.
11. Unplug washer or disconnect power.
12. Reassemble all parts and panels.
13. Perform the Service Test Cycle on pages 2-4 and 2-5 to verify repairs.

INTERFERENCE FILTER (IF) - FIGURE 1



For Service Technician Use Only

APPLIANCE CONTROL UNIT (ACU) & PINOUTS - FIGURE 2



ACCESSING THE APPLIANCE CONTROL UNIT (ACU)

Appliance Control Unit (ACU) – Gently lay the washer on its right side (place a 2 x 4 or similar sized object on the floor prior to laying the washer on its side to elevate the washer slightly, making it easier to upright it later). Remove the ACU screw on the rear of the washer cabinet with a 7mm hex nut driver. Push the plastic lever attached to the ACU (see Figure 3), slide the ACU to the right (toward the suspension dampers), freeing the ACU tabs from the ACU slots in the washer cabinet (see Figure 4). Lift the ACU out of the washer cabinet. When placing the washer upright, make sure suspension springs remain in place.

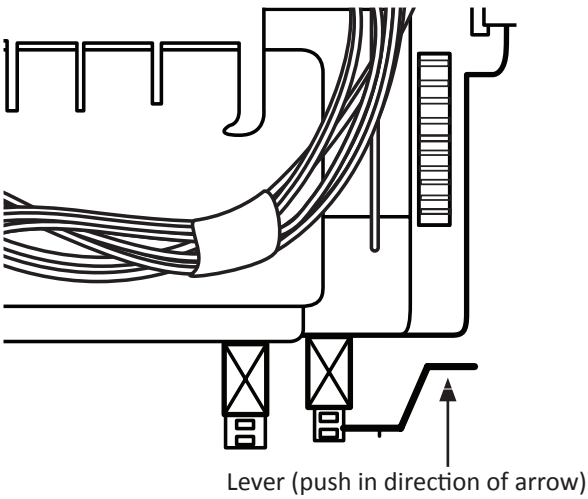


Figure 3 - Pushing Lever on ACU

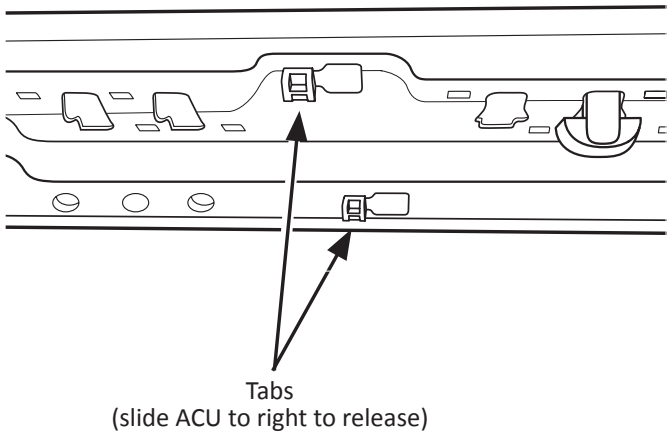


Figure 4 - Releasing ACU Tabs from Cabinet

For Service Technician Use Only

⚠ WARNING



Electrical Shock Hazard

Disconnect power before servicing.

Replace all parts and panels before operating.

Failure to do so can result in death or electrical shock.

TEST #2: User Interface (UI)

This test is performed when any of the following situations occurs during the Service Test Cycle (see pages 2-4 and 2-5):

- None of the indicators or display turn on
- Some buttons do not light indicators
- No beep sound is heard

None of the indicators or display turn on:

1. Unplug washer or disconnect power.
2. Gently lay washer on its right side to access the ACU.
3. Visually check that all ACU connectors are inserted all the way into the ACU. See Figure 2, page 3-5.
4. Remove console assembly. Do not pull on the wires between the console and ACU.
5. Visually check that all UI connectors are inserted all the way into the UI.
6. Visually check that the UI and housing assembly is properly inserted into the front console.
7. If all visual checks pass, perform TEST #1: ACU Power Check, page 3-4, to verify supply voltage and health of microcontroller.
   - If supply voltages are present and microcontroller is functioning properly, replace the user interface and housing assembly.
   - If supply voltages are not present, replace the ACU.
8. Reassemble all parts and panels.
9. Plug in washer or reconnect power.
10. Perform the Service Test Cycle on pages 2-4 and 2-5 to verify repair.

Some buttons do not light indicators:

1. Unplug washer or disconnect power.
2. Remove the top panel to access the User Interface (UI).
3. Visually check that the UI and housing assembly is properly inserted into the front console.
4. If visual check passes, replace the UI and housing assembly.
5. Reassemble all parts and panels.
6. Plug in washer or reconnect power.
7. Perform the Service Test Cycle on pages 2-4 and 2-5 to verify repair.

No beep sound is heard:

1. Unplug washer or disconnect power.
2. Gently lay washer on its right side to access the ACU.
3. Visually check that all ACU connectors are inserted all the way into the ACU. See Figure 2, page 3-5.
4. Remove console assembly. Do not pull on the wires between the console and ACU.
5. Visually check that all UI connectors are inserted all the way into the UI.
6. If all visual checks pass, replace the UI and housing assembly.
7. Perform the Service Test Cycle on pages 2-4 and 2-5 to verify repair.

UI Connector on ACU

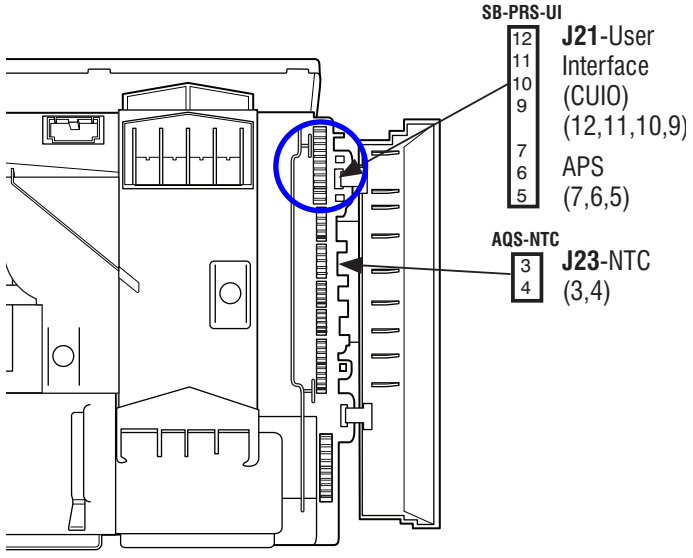
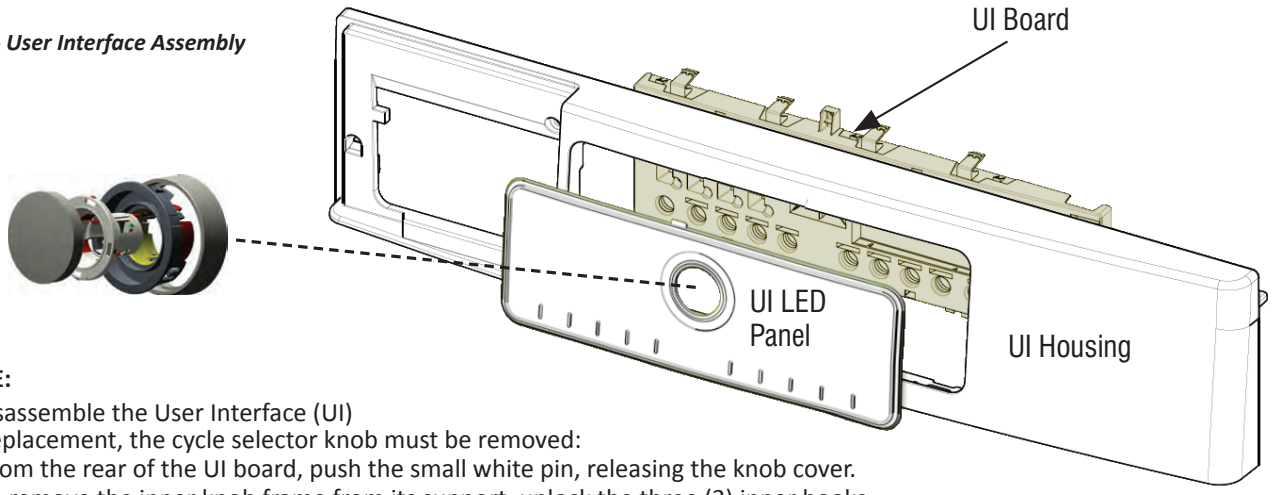


Figure 1 - UI Connector Location on ACU

For Service Technician Use Only

Figure 2 - User Interface Assembly



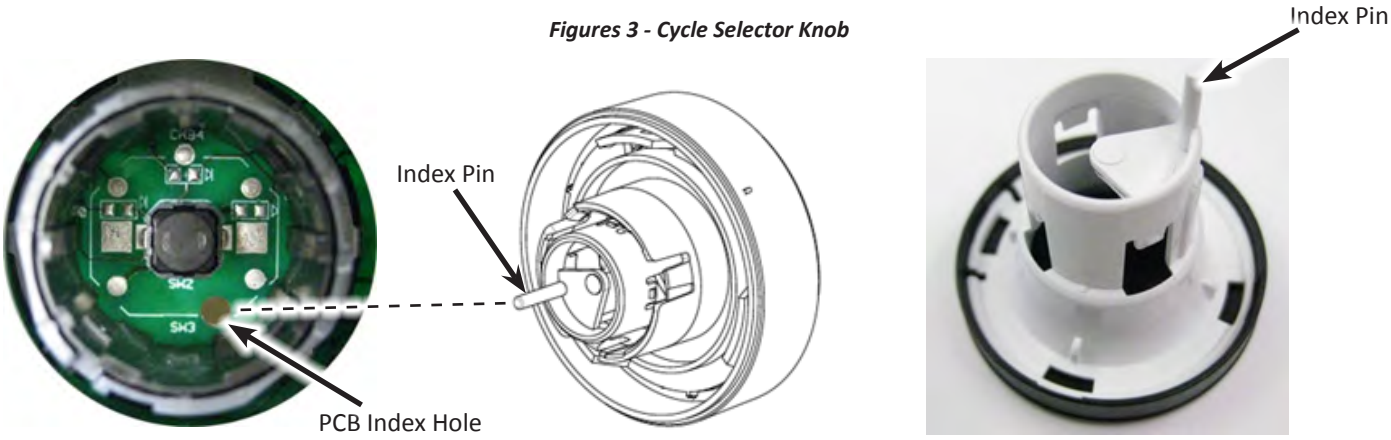
NOTE:

To disassemble the User Interface (UI)
for replacement, the cycle selector knob must be removed:

- From the rear of the UI board, push the small white pin, releasing the knob cover.
- To remove the inner knob frame from its support, unlock the three (3) inner hooks by prying each with a small screwdriver.

Unclip and separate the UI from its housing.

Figures 3 - Cycle Selector Knob



The inner knob index pin has to be assembled to the PCB index hole. Related to the front view, the index hole in the PCB is rotated around 20-25° from the 6 o'clock position

USER INTERFACE

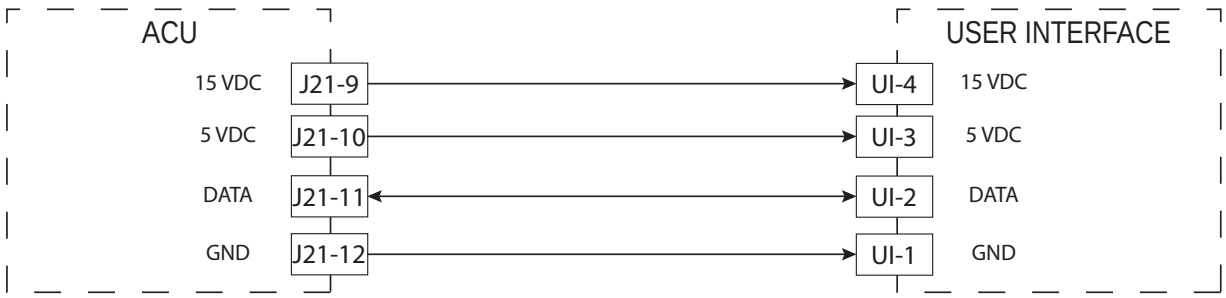


Figure 4 - User Interface Strip Circuit

For Service Technician Use Only

⚠ WARNING



Electrical Shock Hazard

Disconnect power before servicing.

Replace all parts and panels before operating.

Failure to do so can result in death or electrical shock.

TEST #3: Motor Circuit

This test checks the motor, ACU, and wiring.

1. Check the motor and electrical connections by performing the Service Test Cycle on pages 2-4 and 2-5. The following steps assume that this step was unsuccessful.
2. Unplug washer or disconnect power.
3. Check to see if basket will turn freely.
   - ➢ If basket turns freely, go to step 4.
   - ➢ If basket does not turn freely, determine what is causing the mechanical friction or lockup.
4. Gently lay washer on its right side to access the ACU.
5. Perform TEST #1: ACU Power Check, page 3-4, then visually check that connector **J36** is inserted all the way into the ACU.
   - ➢ If visual checks pass, go to step 6.
   - ➢ If visual checks fail, reconnect **J36** and repeat step 1.
6. Check the motor windings. Disconnect the motor harness from the ACU. With an ohmmeter, verify the resistance values as shown below:

Motor Harness	Windings
Pins 1 & 2	6-20 Ω
Pins 2 & 3	6-20 Ω
Pins 1 & 3	6-20 Ω

   - ➢ If the values are outside the range or open, replace stator assembly; otherwise, reconnect the motor harness and go to step 7.
7. Plug in washer or reconnect power.
8. Run the Service Test Cycle on pages 2-4 and 2-5.

   IMPORTANT: Door must be closed and locked to run motor.
9. When the test shows “C01, C03, & C04” on the display, the motor is powered and the motor should be moving. If it is not, replace the ACU.
10. Unplug washer or disconnect power.
11. Reassemble all parts and panels.
12. Perform the Service Test Cycle on pages 2-4 and 2-5 to verify repair.

Motor Connector on ACU

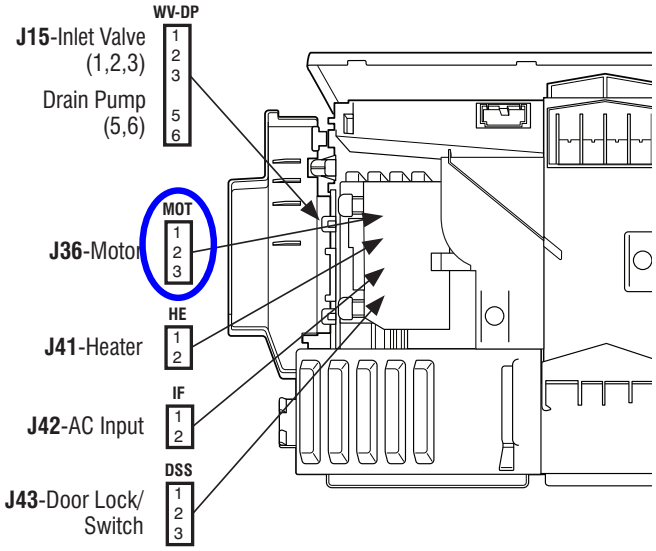


Figure 1 - Motor Connector Location on ACU

MOTOR

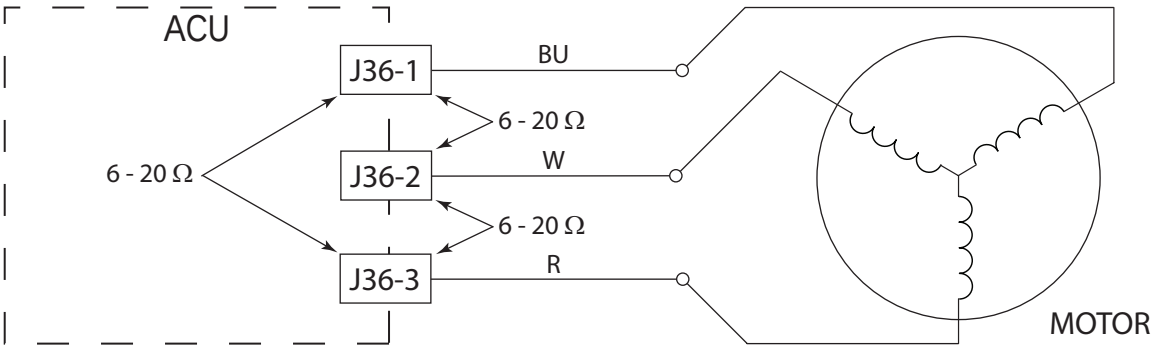


Figure 2 - Direct Drive Motor Strip Circuit

For Service Technician Use Only

⚠ WARNING



Electrical Shock Hazard

Disconnect power before servicing.

Replace all parts and panels before operating.

Failure to do so can result in death or electrical shock.

TEST #4: Door Lock System

Check the relays and electrical connections to the door lock by performing the Service Test Cycle on pages 2-4 and 2-5. The following steps assume the door cannot lock or unlock during that test. Perform the following checks if the washer does not lock (or unlock).

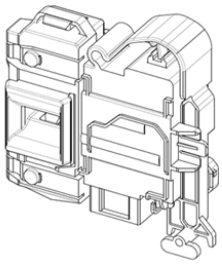


Figure 1 - Door Lock

1. Check door lock mechanism for obstruction or binding. Repair as necessary.
2. Unplug washer or disconnect power.
3. Gently lay washer on its right side to access the ACU.
4. Visually check that the **J43** (door switch) connector is inserted all the way into the ACU.
   - ➢ If visual check passes, go to step 5.
   - ➢ If any of the connectors are not inserted properly, reconnect and retest door lock.
5. Disconnect the **J43** connector from the ACU.
   NOTE: To measure the door lock switch in the "locked" position, plug in washer or reconnect power. Press the **POWER** button, select any cycle, and then press **START**.

   Actuation of the door lock solenoid should be heard. At that point, unplug the washer and disconnect **J43** from the ACU and measure resistance across pins 2 & 3 (ACU side). Resistance should measure according to the following chart:

Component	Resistance	Contacts Measured	
Door Lock Solenoid	60-90 ohms (Door must be closed)	J43-1	J43-2
Door Switch	Door Open = Open Circuit Door Closed = 60-90 ohms	J43-1	J43-2
Lock Switch	Locked = 0 ohms Unlocked = Open Circuit	J43-2	J43-3

   - ➢ If resistance values are good, go to step 6.
   - ➢ If any of the measurements are out of range, check the harness of the suspected component between the ACU and door lock mechanism for continuity.
   - ➢ If the harness and connections are good, replace the door lock mechanism. **IMPORTANT**: To minimize risk of damage to door lock/switch wires, remove the door lock mechanism screws before removing the front panel.
6. If the preceding steps did not correct the lock problem, replace the ACU and retest door lock mechanism.
   - ➢ Unplug washer or disconnect power.
   - ➢ Replace the ACU.
   - ➢ Reassemble all parts and panels.
   - ➢ Perform the Service Test Cycle on pages 2-4 and 2-5 to verify repair.

DOOR LOCK SYSTEM

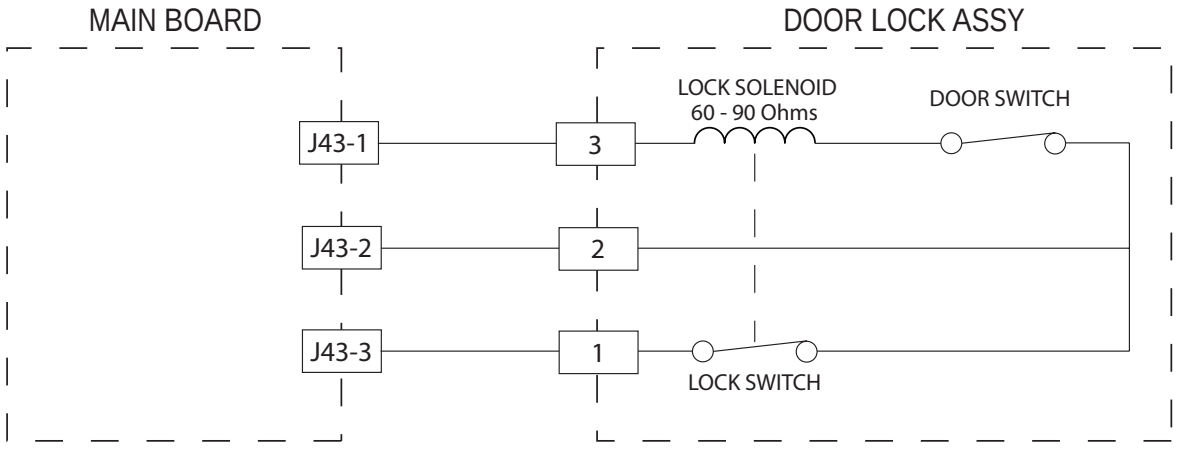


Figure 2 - Door Lock Strip Circuit

For Service Technician Use Only

⚠ DANGER



Electrical Shock Hazard

Only authorized technicians should perform diagnostic voltage measurements.

After performing voltage measurements, disconnect power before servicing.

Failure to follow these instructions can result in death or electrical shock.

TEST #5: Water Inlet Valve

This test checks the electrical connections to the valve and the valve itself. The valve is a double valve consisting of a prewash valve and a main wash valve.

1. Check the relays and electrical connections to the valve by performing the Service Test Cycle on pages 2-4 and 2-5. The following steps assume one or more of the valves did not turn on.
2. For the valve(s) in question, check the individual solenoid coils:
   a. Unplug washer or disconnect power.
   b. Remove top panel to access the inlet valve, and then gently lay washer on its right side to access the ACU.
   c. Remove connector **J15** from the ACU. Refer to ACU diagram on page 3-5.
   d. Check harness connections to the solenoid valves. Verify continuity in harness between ACU and solenoid valves.
3. Check valve coil resistance at the valve, or across the following connector pinouts:

Valve	Pinout
Prewash Valve	J15, pins 1 & 2
Main Wash Valve	J15, pins 1 & 3

Resistance should be 890Ω–1.1k Ω.

- If resistance readings are outside the range or open, replace the valve assembly.
- If resistance readings are within range, reconnect **J15**. Go to step 4.

4. With a voltmeter set to **AC**, attach the leads across the pins of the suspect valve (see chart in step 3). Plug in washer or reconnect power.
5. Run the Service Test Cycle and check for line voltage across the pins of the valve. **NOTE**: Refer to the Service Test Cycle on pages 2-4 and 2-5 to determine when the prewash valve and main wash valve are actuated.
   - If line voltage is present and valve still does not activate, replace valve assembly.
   - If line voltage is not present, replace the ACU.
6. Unplug washer or disconnect power.
7. Reassemble all parts and panels.
8. Perform the Service Test Cycle on pages 2-4 and 2-5 to verify repairs.

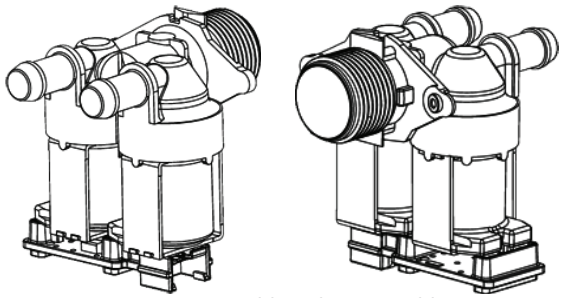


Figure 1 - Double Valve Assembly

WATER INLET VALVE ASSEMBLY

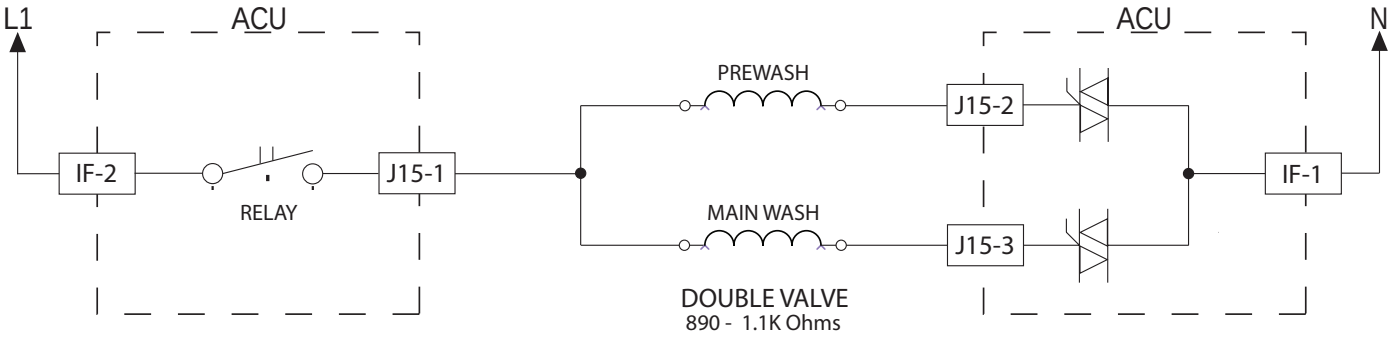


Figure 2 - Water Inlet Valve Strip Circuit

For Service Technician Use Only

⚠ DANGER



Electrical Shock Hazard

Only authorized technicians should perform diagnostic voltage measurements.

After performing voltage measurements, disconnect power before servicing.

Failure to follow these instructions can result in death or electrical shock.

TEST #6: Water Level Sensor (APS)

This test checks the water level sensor, ACU, and wiring. **NOTE**: Usually, if the water level sensor malfunctions, the washer will generate a water level sensor error (F36), long fill error (F01), or long drain error (F03).

1. Check the functionality of the water level sensor by running a small load cycle. The valve should turn off automatically after sensing the correct water level in the tub. The following steps assume that this step was unsuccessful.
2. Press **START/PAUSE** to stop the cycle and then press **POWER**. The cycle will cancel and drain the water from the tub.
3. Unplug washer or disconnect power.
4. Remove top and rear panels to access tub, air trap, and pressure hose connections. Water level sensor is located at top right front of cabinet.
5. Check connections from tub to air trap, air trap to pressure hose, and pressure hose to water level sensor.
6. Check to ensure hose is routed correctly in the lower cabinet and not pinched or crimped.
7. Verify there is no water, suds, or debris in the hose or air trap. Disconnect hose from water level sensor, clean air trap and remove and blow into hose to clear water, suds, or debris.
8. Check hose for leaks. Replace if needed.
9. Visually check that connector **J21** is inserted all the way into the ACU. Also check that the water level sensor harness is securely connected to the sensor.
10. Check the harness between the ACU and water level sensor for continuity.
    - ➢ If there is continuity, go to step 11.
    - ➢ If there is no continuity, repair or replace as necessary.
11. With a voltmeter set to **DC**, connect black probe to ACU connector **J21**, pin 6 (GND) and red probe to **J21**, pin 5 (+5V [Vcc]). Plug in washer or reconnect power.
    - ➢ If +5V DC is present, replace the water level sensor. (Before replacing the sensor, make sure that there is NO water remaining in the tub or there will not be an accurate water level measurement and an error code may appear. Drain the tub by running a drain & spin cycle with the sensor plugged into J21 but with the hose removed).
    - ➢ If +5V DC is not present, perform TEST #1: ACU Power Check on page 3-4.
12. If the preceding steps did not correct the problem, replace the ACU.
    - ➢ Unplug washer or disconnect power.
    - ➢ Replace the ACU.
    - ➢ Reassemble all parts and panels.
    - ➢ Perform the Service Test Cycle on page 2-4 and 2-5 to verify repair.

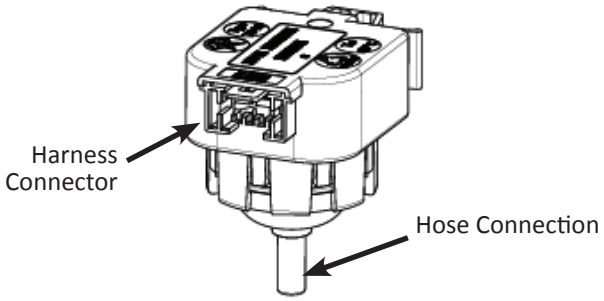


Figure 1 - Pressure Sensor (APS)

WATER LEVEL SENSOR (APS)

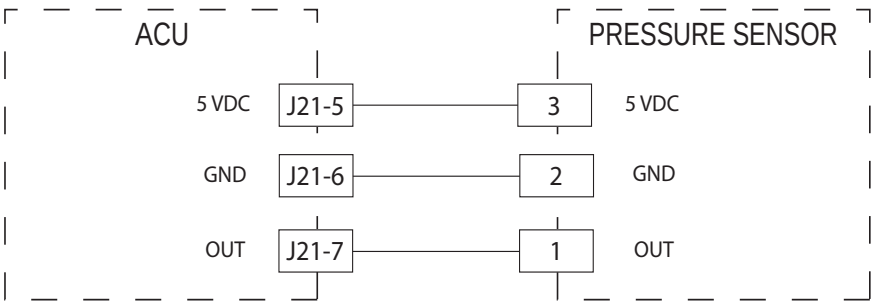


Figure 1 - Water Level Sensor

For Service Technician Use Only

⚠ WARNING



Electrical Shock Hazard

Disconnect power before servicing.

Replace all parts and panels before operating.

Failure to do so can result in death or electrical shock.

TEST #7: Drain Pump

Perform the following checks if washer does not drain.

1. Check for obstructions in the usual areas. Clean and then perform step 2.
2. Check the drain pump and electrical connections by performing the Service Test Cycle on pages 2-4 and 2-5. The following procedures assume that this step was unsuccessful.
3. Unplug washer or disconnect power.
4. Gently lay washer on its right side to access the ACU.
5. Visually check that the **J15** connector is inserted all the way into the ACU.
   - ➢ If visual check passes, go to step 6.
   - ➢ If connector is not inserted properly, reconnect **J15** and repeat step 2.
6. Remove connector **J15** from the ACU. With an ohmmeter, measure the resistance across pins 5 and 6.
7. Resistance should be 15–60 Ω when the pump is at room temperature.
   - ➢ If the reading is infinite (open), go to step 8.
   - ➢ If the reading is correct, go to step 12.
8. Remove the rear panel to access drain pump. Verify that pump, pump filter, drain hose, and air trap are free from obstructions.
9. Visually check the electrical connections at the drain pump.
   - ➢ If visual check passes, go to step 10.
   - ➢ If connections are loose, reconnect the electrical connections and repeat step 2.
10. With an ohmmeter, check harness for continuity between the drain pump and ACU.
    - ➢ If there is continuity, go to step 11.
    - ➢ If there is no continuity, replace the lower machine harness and repeat step 2.
11. With an ohmmeter, measure the resistance across the two pump terminals. Resistance should be 15–60 Ω.
    - ➢ If the reading is infinite (open), replace the drain pump assembly.
    - ➢ If the reading is correct, go to step 12.
12. If the preceding steps did not correct the drain problem, replace the ACU.
    - ➢ Unplug washer or disconnect power.
    - ➢ Replace the ACU.
    - ➢ Reassemble all parts and panels.
    - ➢ Perform the Service Test Cycle on pages 2-4 and 2-5 to verify repair.

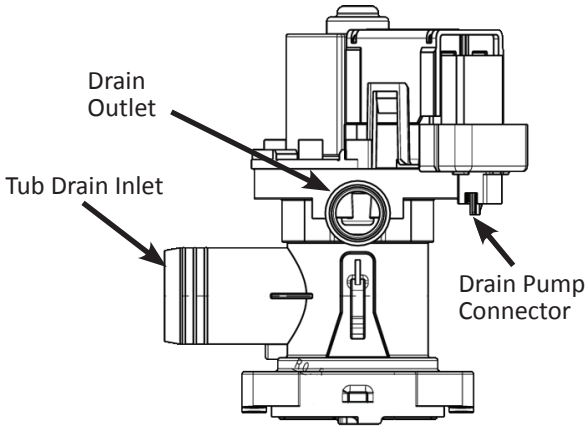


Figure 1 - Drain Pump Assembly

DRAIN PUMP

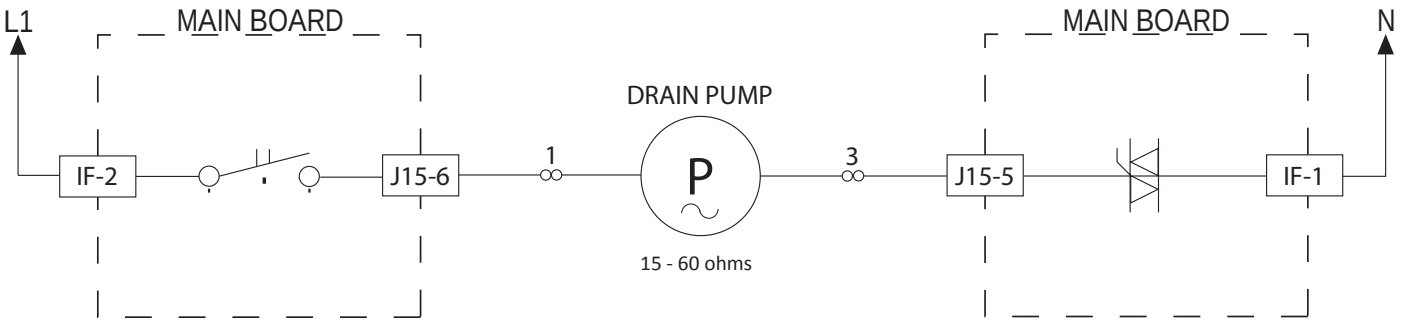


Figure 2 - Drain Pump Strip Circuit

For Service Technician Use Only

⚠ WARNING



Electrical Shock Hazard

Disconnect power before servicing.

Replace all parts and panels before operating.

Failure to do so can result in death or electrical shock.

TEST #8: Heater Element

This test checks the heating element, wiring, and ACU.

1. Unplug washer or disconnect power.
2. Gently lay washer on its right side to access the ACU.
3. Disconnect connector **J41** from the ACU.
4. Using an ohmmeter, measure the resistance across pins 1 and 2 of connector **J41**.
   - ➢ If the resistance is 7–30 Ω, the heating element and wiring are good; go to step 8.
   - ➢ If the resistance is open, go to step 5.
5. Remove back panel to access the heating element.
6. Disconnect the wire connectors from the heating element. See Figure 8.
7. Using an ohmmeter, measure the resistance across the two heating element terminals.
   - ➢ If the resistance is 7–30 Ω, the heating element is good; replace the lower main harness.
   - ➢ If the resistance is open, replace the heating element.
8. If the preceding steps did not correct the heating element problem, replace the ACU.
   - ➢ Unplug washer or disconnect power.
   - ➢ Replace the ACU.
   - ➢ Reassemble all parts and panels.
   - ➢ Perform the Service Test Cycle on pages 2-4 and 2-5 to verify repair.

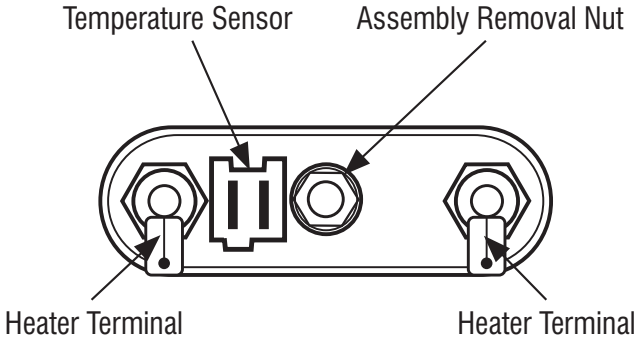


Figure 1 - Heater Element

Heater Connector on ACU

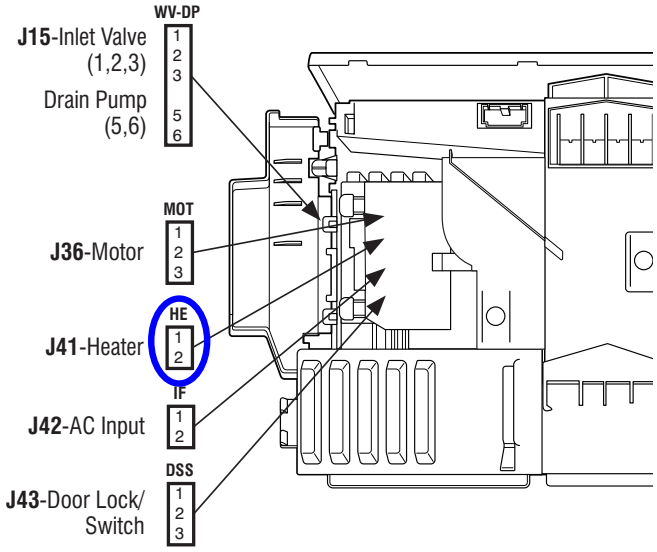


Figure 2 - Heater Connector Location on ACU

HEATING ELEMENT

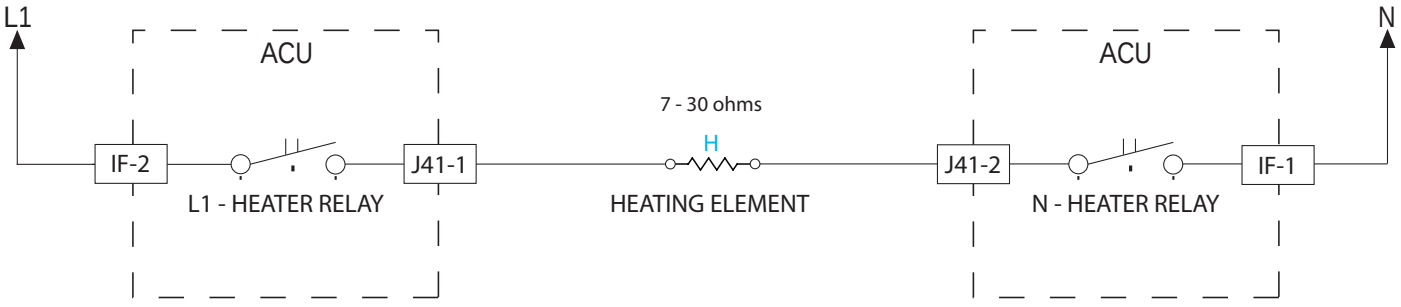


Figure 3 - Heating Element Strip Circuit

For Service Technician Use Only

⚠ WARNING



Electrical Shock Hazard

Disconnect power before servicing.

Replace all parts and panels before operating.

Failure to do so can result in death or electrical shock.

TEST #9: Temperature Sensor

This test checks the temperature sensor, wiring, and ACU.

1. Unplug washer or disconnect power.
2. Gently lay washer on its right side to access the ACU.
3. Disconnect connector **J23 (AQS-NTC)** from the ACU.
4. Using an ohmmeter, measure the resistance across pins 3 and 4 of temperature sensor connector **J23 (AQS-NTC)**.

THERMISTOR SENSOR RESISTANCE		
Approx. Temperature		Approx. Resistance
F°	C°	(KΩ)
32	0	36.0
41	5	28.5
50	10	22.8
59	15	18.2
68	20	14.8
77	25	12.0
86	30	9.8

THERMISTOR SENSOR RESISTANCE		
Approx. Temperature		Approx. Resistance
95	35	8.0
104	40	6.7
113	45	5.5
122	50	4.6
131	55	3.9
140	60	3.2

- If the resistance is infinite or close to zero, go to step 5.

5. Remove the back panel to access the heating element.
6. Disconnect the temperature sensor connector from the heating element. See Figure 1, below.
7. Using an ohmmeter, measure the resistance across pins 1 and 2 of the temperature sensor (on the heating element).
   - If the resistance is within the specified range, the sensor is good; replace the lower main harness.
   - If the resistance is open, replace the temperature sensor.
8. If the preceding steps did not correct the temperature sensor problem, replace the ACU.
   - Unplug washer or disconnect power.
   - Replace the ACU.
   - Reassemble all parts and panels.
   - Perform the Service Test Cycle on pages 2-4 and 2-5 to verify repair.

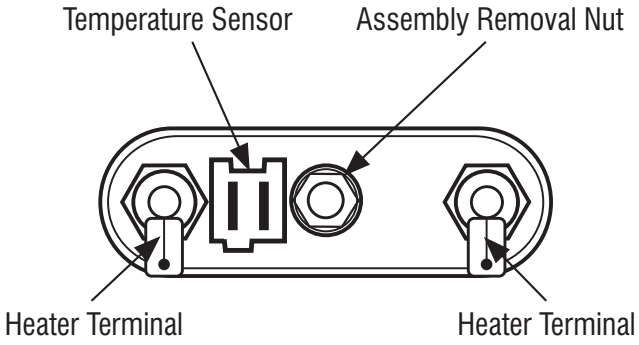


Figure 1 - Temperature Sensor

TEMPERATURE SENSOR

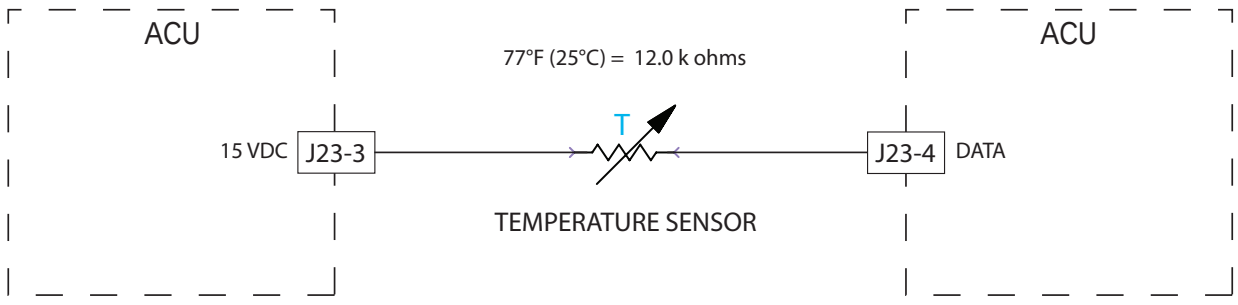


Figure 2 - Temperature Sensor Strip Circuit

For Service Technician Use Only

⚠ WARNING



Electrical Shock Hazard

Disconnect power before servicing.

Replace all parts and panels before operating.

Failure to do so can result in death or electrical shock.

Inlet Valve

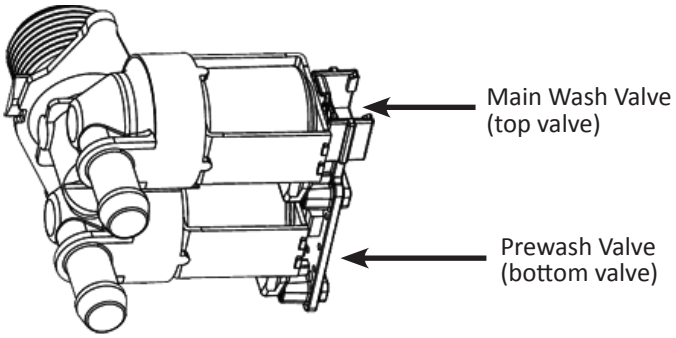


Figure 1 - Inlet Valve

TEST #10: Dispenser System

Perform the following checks if the washer will not dispense detergent or fabric softener.

1. Check water supply to washer. Check water hose connections to and inside the washer.
2. Verify that dispenser drawer is not clogged with detergent.
3. Unplug washer or disconnect power.
4. Remove the top panel to access the dispenser.
5. Verify that the inlet valve is working through TEST #5 on page 3-10. The water is dispensed as follows:
   - ➢ Detergent Dispenser: Through prewash and main wash valves
   - ➢ Fabric Softener: Through main wash valve

Dispenser Assembly (see Figure below)

A. Liquid fabric softener compartment

Automatically dilutes and dispenses liquid fabric softener at the optimum time in the cycle.

- Use only liquid fabric softener in this dispenser.

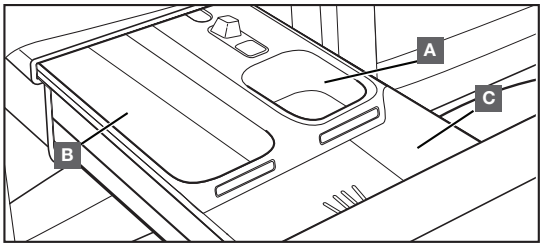
B. Prewash compartment

When using the PreWash option, add detergent here or directly into the drum.

C. Main wash compartment

This compartment holds liquid or powdered HE detergent for your main wash cycle. **If the PreWash option has been selected, use powdered detergent in the main wash compartment; this ensures that the detergent stays in the detergent dispenser until the start of the main wash phase.**

IMPORTANT: Do not use chlorine bleach in this washer.



Dispenser System

The inlet hoses must be connected properly according to position marks on dispenser cover. The Prewash Valve (bottom valve) is connected to the connector marked “I” and the Main Wash Valve (top valve) is connected to the connector marked “II”. **NOTE**: Dispenser connector’s “V” & “HF” are used.



Figure 2 - Dispenser System

For Service Technician Use Only

⚠ WARNING



Electrical Shock Hazard

Disconnect power before servicing.

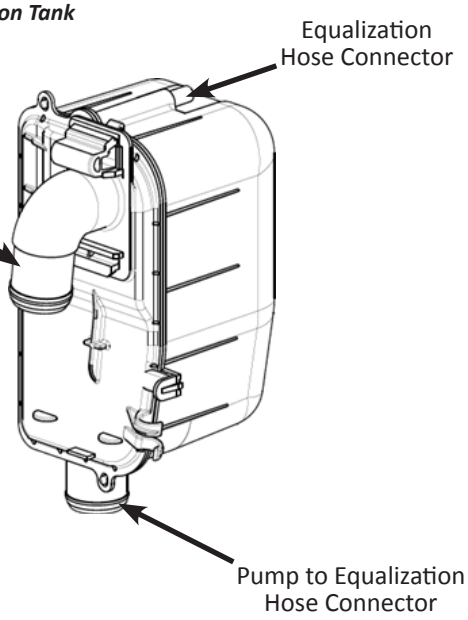
Replace all parts and panels before operating.

Failure to do so can result in death or electrical shock.

TEST #11: Equalization Tank/Drain Hose

The Equalization Tank serves as the ventilation system to avoid siphoning during the drain and fill cycles. It also provides an air break between the drain hose and pump; and tank and outer drain hose. Water flow will be interrupted after the pump is deactivated.

Figure 1 - Equalization Tank



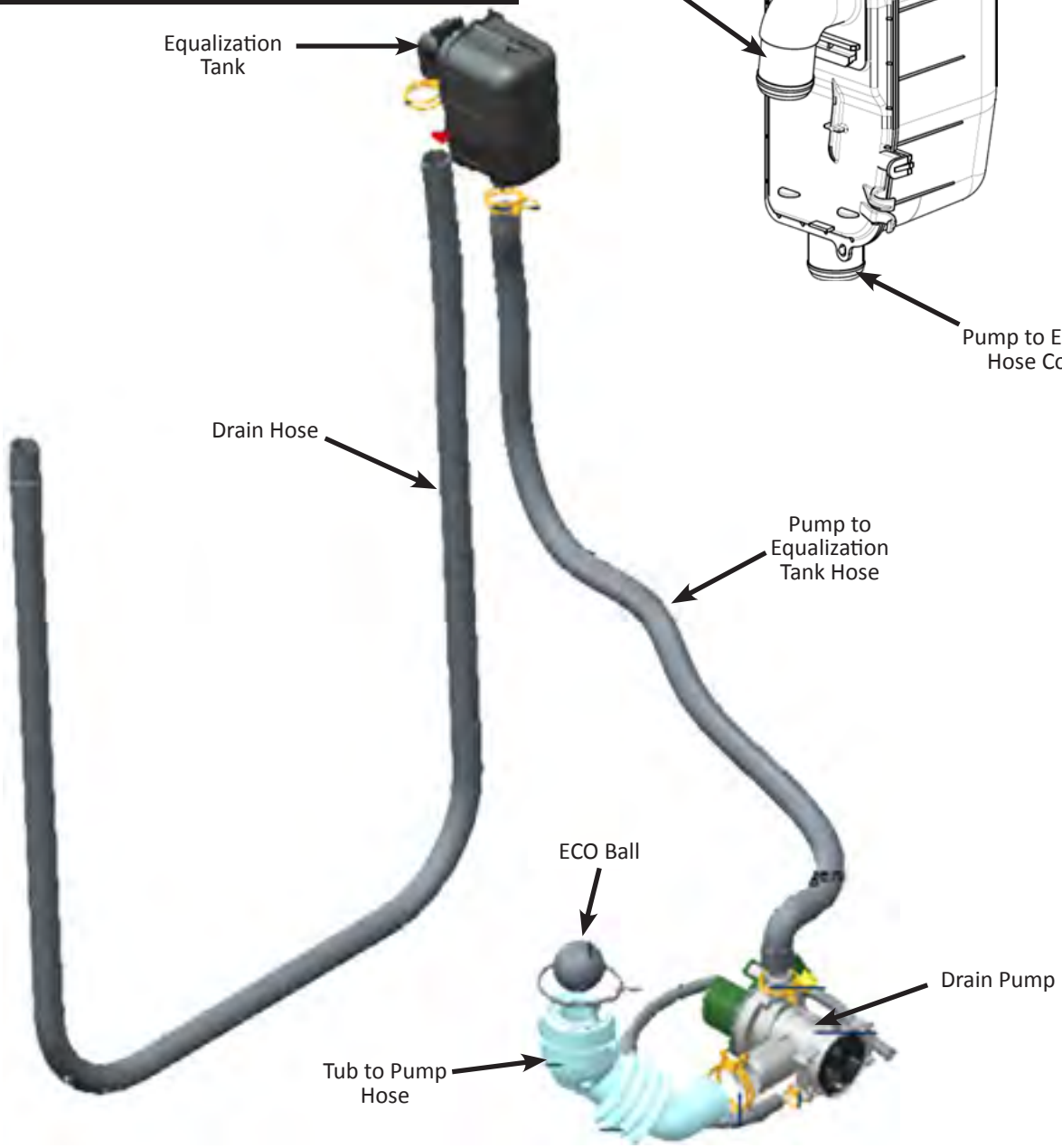


Figure 2 - Equalization Tank / Drain System

Multimedia Enhanced

Section 4: Component Access

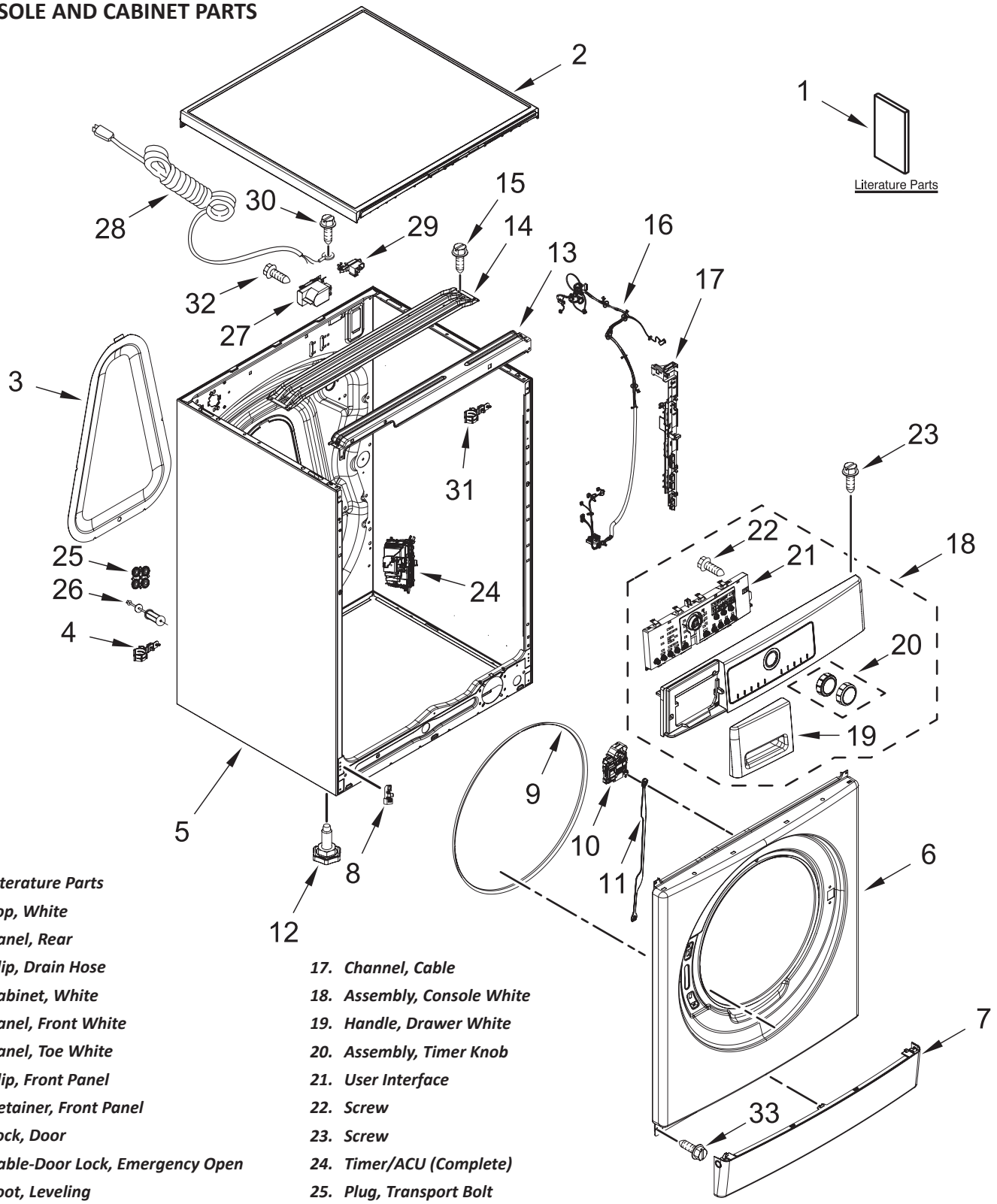
This section provides service parts, assemblies, and component locations for the "Whirlpool Compact Front Load Washer."

- Parts & Assemblies-Console and Cabinet Parts
- Parts & Assemblies-Door Parts
- Parts & Assemblies-Pump Parts
- Parts & Assemblies-Dispenser Parts
- Parts & Assemblies-Tub and Drive Parts
- Removing the Toe Panel/Manually Open Door
- Removing the Top Panel
- Removing the Water Valve Assembly
- Removing the Pressure Switch
- Removing the Interference Filter
- Removing the Dispenser Housing
- Removing the Appliance Control Unit (ACU)
- Removing the Heater
- Removing the Console/User Interface
- Removing the Front Panel Assembly
- Removing the Drain Pump & ECO Ball
- Removing the Direct Drive Motor
- Removing the Tub Assembly

Video Available  Look for this ICON throughout Section 4

Parts & Assemblies

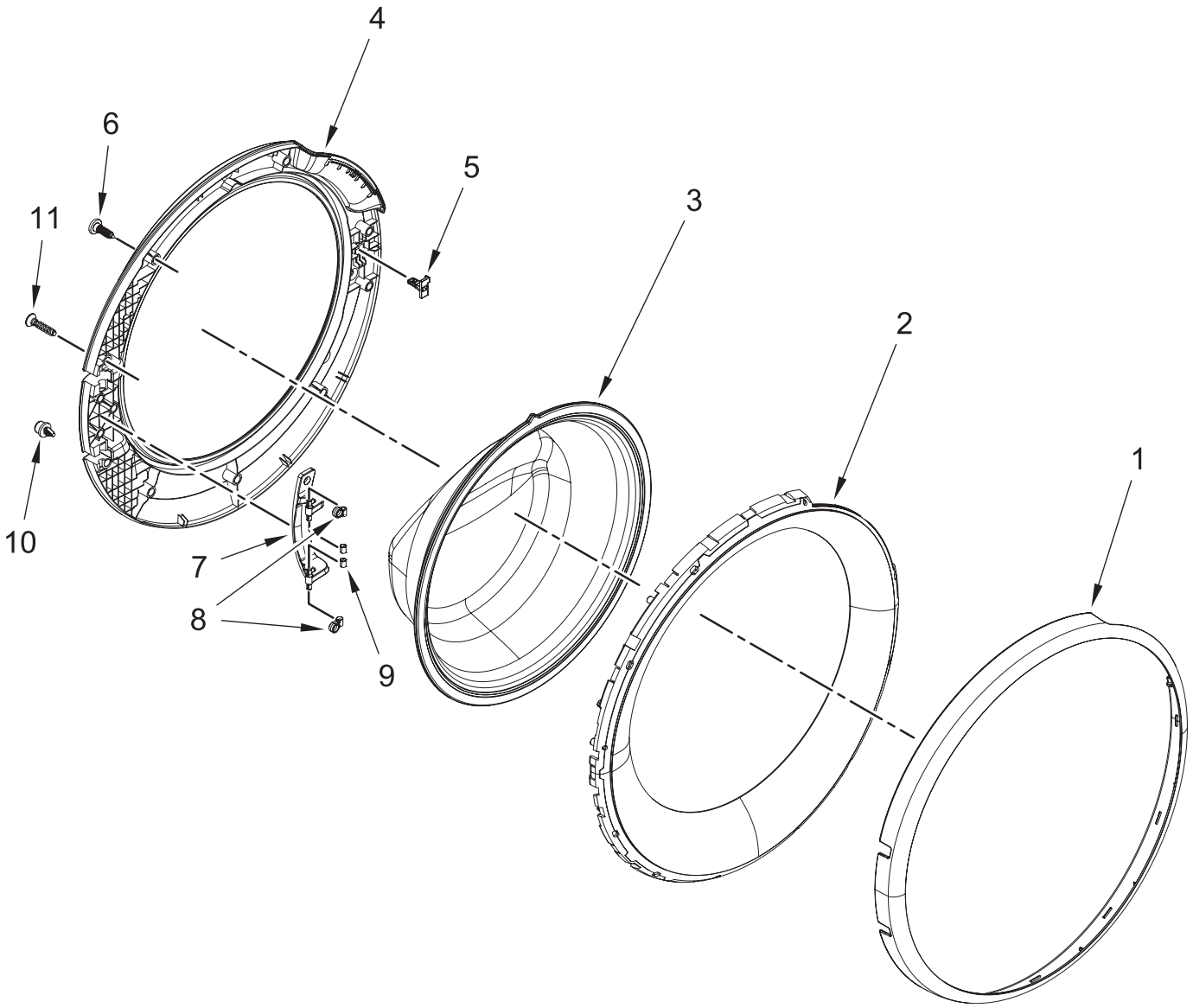
CONSOLE AND CABINET PARTS



1. *Literature Parts*
2. *Top, White*
3. *Panel, Rear*
4. *Clip, Drain Hose*
5. *Cabinet, White*
6. *Panel, Front White*
7. *Panel, Toe White*
8. *Clip, Front Panel*
9. *Retainer, Front Panel*
10. *Lock, Door*
11. *Cable-Door Lock, Emergency Open*
12. *Foot, Leveling*
13. *Bracket, Control*
14. *Bracket, Cross Top*
15. *Screw*
16. *Harness, Main*
17. *Channel, Cable*
18. *Assembly, Console White*
19. *Handle, Drawer White*
20. *Assembly, Timer Knob*
21. *User Interface*
22. *Screw*
23. *Screw*
24. *Timer/ACU (Complete)*
25. *Plug, Transport Bolt*
26. *Bolt, Transport*
27. *Filter, RFI*
28. *Power Cord*
29. *Strain Relief, Power Cord*
30. *Screw*
31. *Clamp, Cable*
32. *Screw*
33. *Screw*

Parts & Assemblies

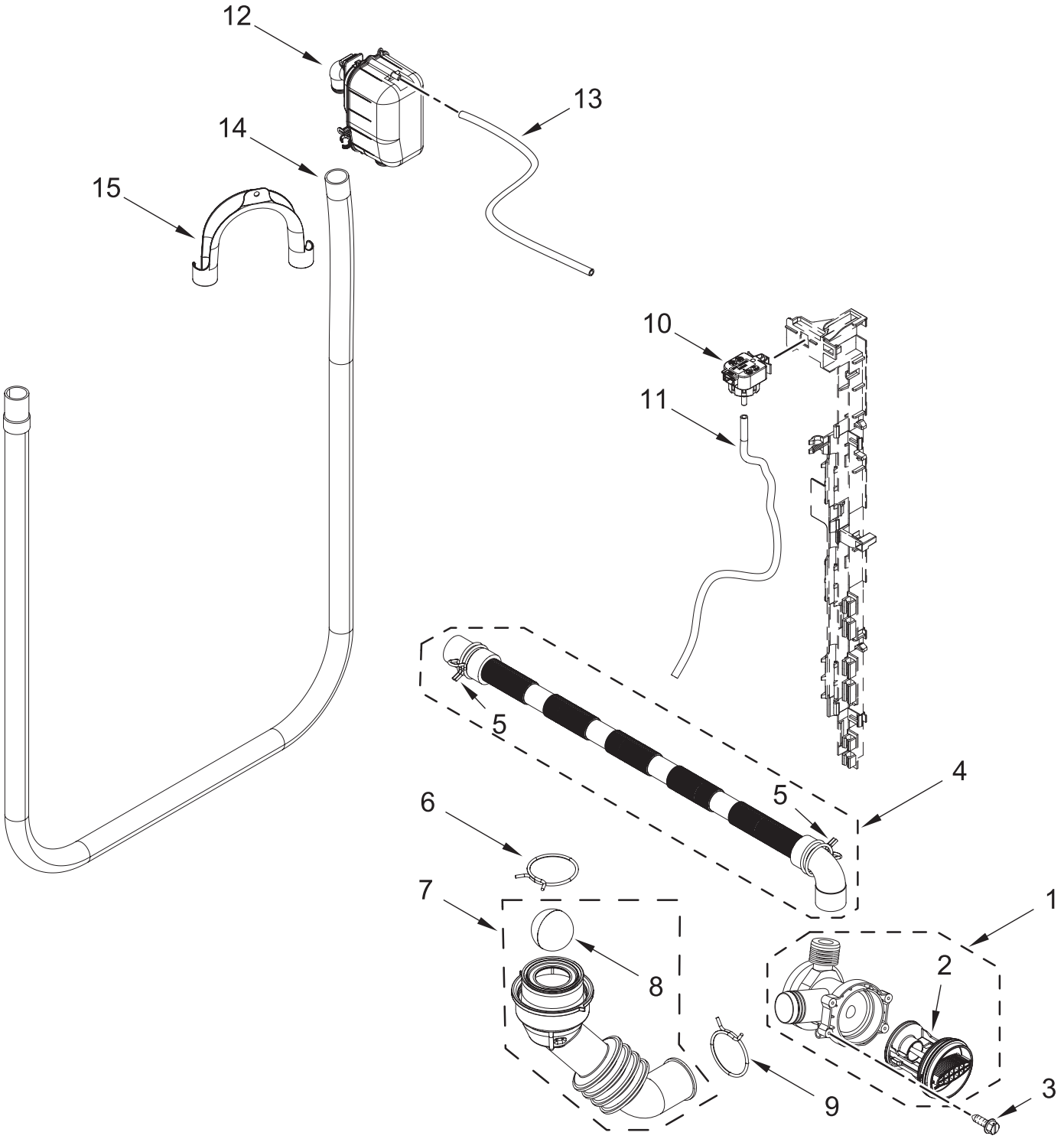
DOOR PARTS



1. *Door, Outer Trim Ring*
2. *Door, Inner Trim*
3. *Door, Glass*
4. *Door, Inner*
5. *Strike, Door*
6. *Screw*
7. *Hinge, Door*
8. *Bushing, Hinge (Outer)*
9. *Bushing, Hinge (Inner)*
10. *Bumper*
11. *Screw*

Parts & Assemblies

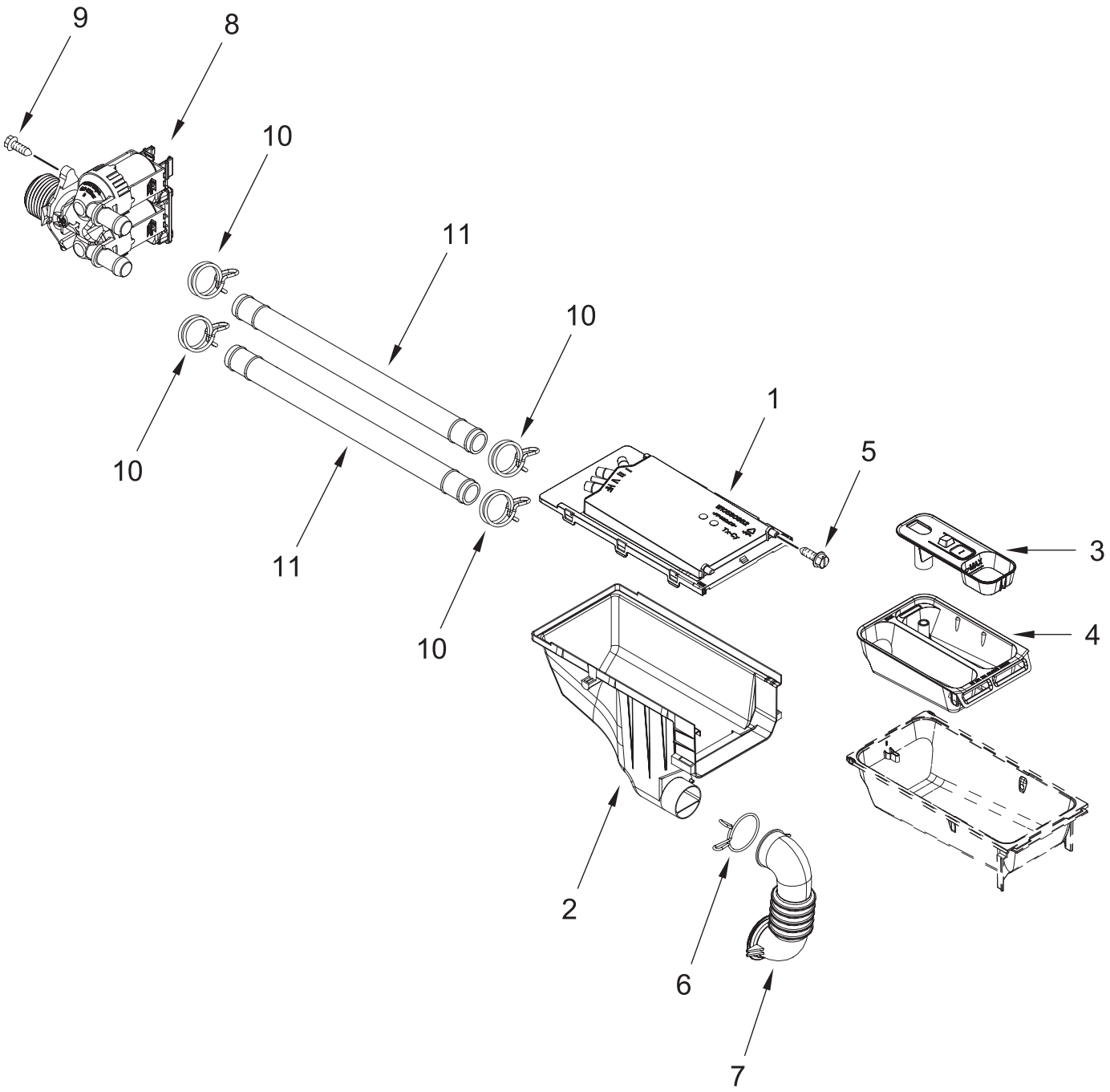
PUMP PARTS



1. *Pump*
2. *Filter, Pump*
3. *Screw*
4. *Hose, Pump-Equalization*
5. *Clamp*
6. *Clamp*
7. *Hose, Tub-Pump*
8. *Ball, ECO*
9. *Clamp*
10. *Sensor, Pressure*
11. *Hose, Pressostat*
12. *Tank, Equalization*
13. *Hose, Equalization - Pump*
14. *Hose, Connector*
15. *U-Bend*

Parts & Assemblies

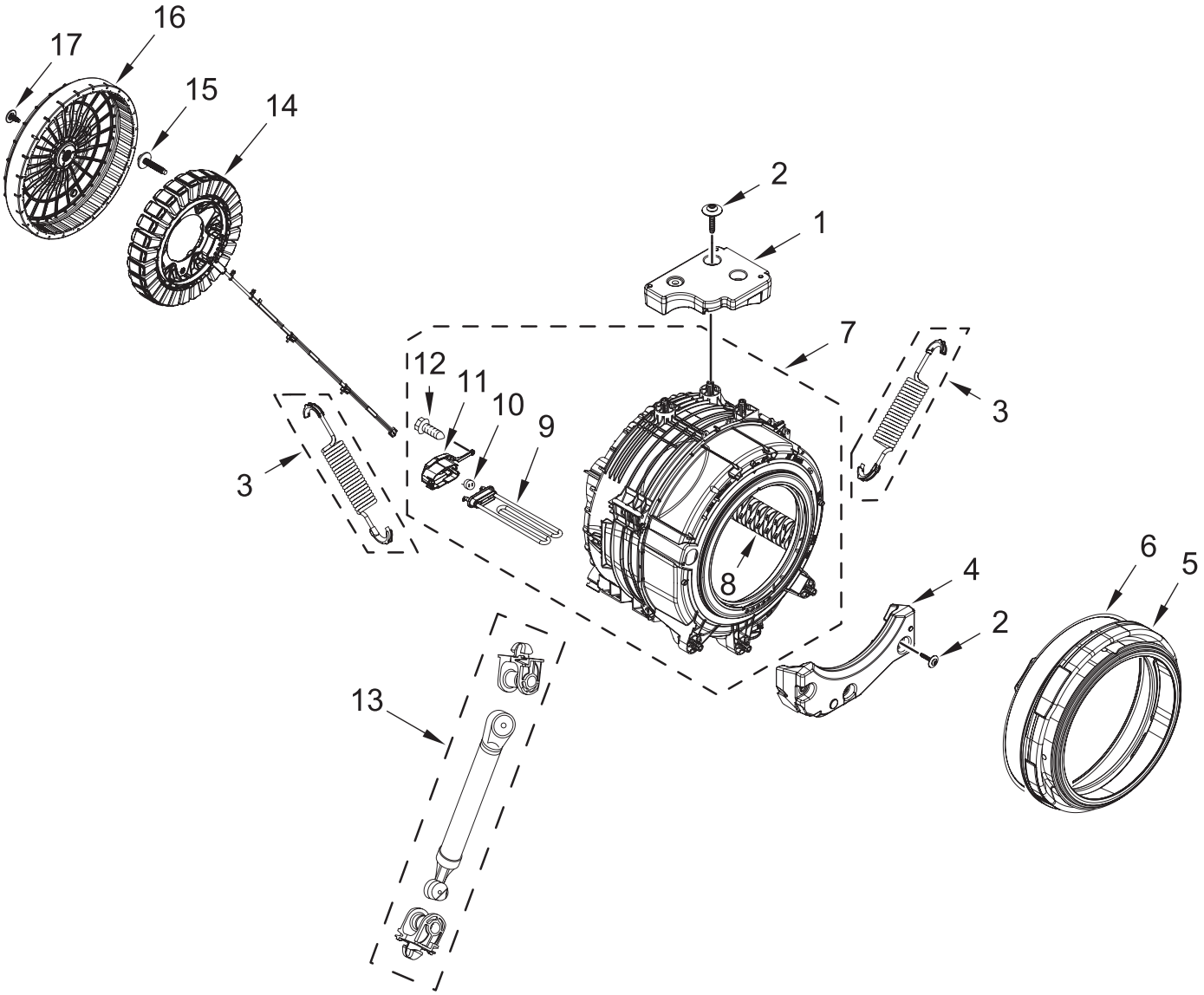
DISPENSER PARTS



1. *Dispenser Lid (Assembly)*
2. *Housing, Dispenser*
3. *Siphon, Softener (Only)*
4. *Drawer, HE Detergent (Only)*
5. *Screw*
6. *Clamp*
7. *Hose, Dispenser - Tub*
8. *Valve, Double*
9. *Screw*
10. *Clamp*
11. *Hose*

Parts & Assemblies

TUB AND DRIVE PARTS



1. *Counterweight, Top*
2. *Screw*
3. *Spring, Suspension (Includes Retainer Clips)*
4. *Counterweight, Front*
5. *Bellow*
6. *Retainer, Bellow-Tub*
7. *Tub*
8. *Lifter*
9. *Heating Element*
10. *Sensor NTC*
11. *Shield, Heat*
12. *Screw*
13. *Damper Assembly*
14. *Rotor*
15. *Screw*
16. *Stator*
17. *Screw*

Removing the Toe Panel/Manually Open Door

To Remove the Toe Panel

1. Push the tabs located on both sides of the toe panel to release it, then remove.

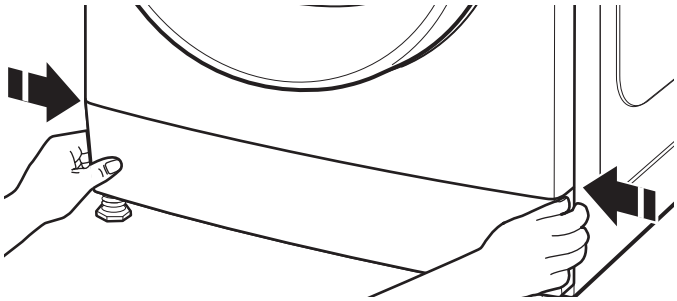


Figure 1

How to Open Door in Case of Power Failure

1. Unplug washer or disconnect power.
2. Turn off water supply to washer.
3. Remove the Toe Panel.
4. Remove the Phillips screw securing the emergency door strap to the lower front panel.

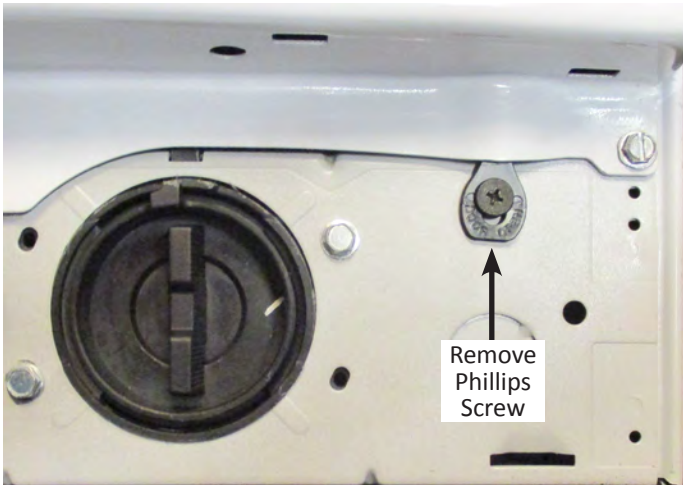


Figure 2

5. Pull down on the strap marked “Door Open.” The door can now be opened.

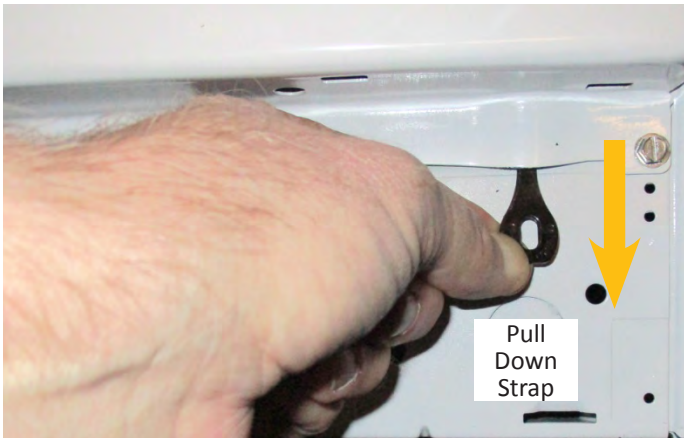


Figure 3

Removing the Top Panel

⚠ WARNING

Electrical Shock Hazard

Disconnect power before servicing.

Replace all parts and panels before operating.

Failure to do so can result in death or electrical shock.

To Remove the Top Panel

1. Unplug washer or disconnect power.
2. Turn off water supply to washer.
3. Remove two (2) 7 mm hex-head mounting screws from the rear of the access panel as indicated in Figure 1.



Figure 1

4. Lift up panel slightly from the rear and remove from washer.

Removing the Water Valve Assembly

⚠ WARNING



Electrical Shock Hazard

Disconnect power before servicing.

Replace all parts and panels before operating.

Failure to do so can result in death or electrical shock.

To Remove the Water Valve Assembly

1. Unplug washer or disconnect power.
2. Turn off water supply to washer.
3. Disconnect the cold inlet water hose.
4. Perform the procedures on page 4-8, “Removing the Top Panel” prior to performing the following steps.
5. Disconnect the water valve connector (see Figure 1).
6. Slide the two (2) water valve clamps away from the valve assembly and remove the two hoses (see Figure 1).

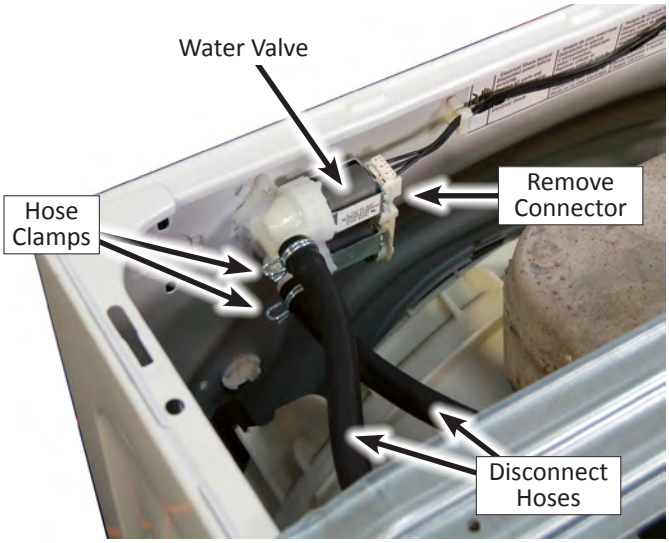


Figure 1

7. Using a Phillips screwdriver, remove the screw securing the water valve to the back panel (see Figure 2). Rotate the valve 90° and remove valve from washer.

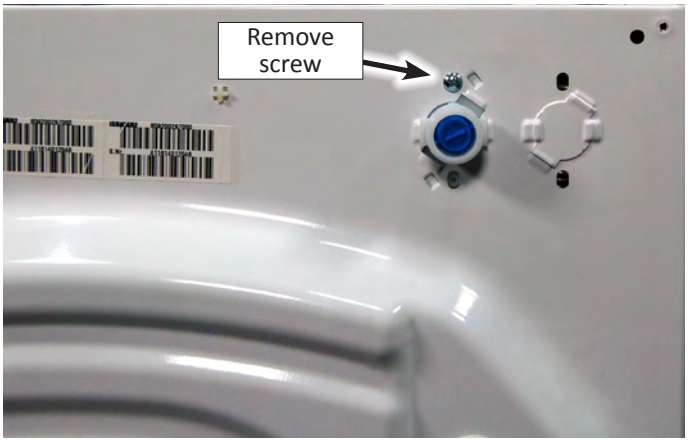


Figure 2

Inlet Hose Connections

The inlet hoses must be connected properly according to position marks on dispenser cover. The Prewash Valve (bottom valve) is connected to the connector marked “I” and the Main Wash Valve (top valve) is connected to the connector marked “II”.
NOTE: Dispenser connector’s “V” & “HF” are not used.



Figure 3

Removing the Pressure Switch

WARNING



Electrical Shock Hazard

Disconnect power before servicing.

Replace all parts and panels before operating.

Failure to do so can result in death or electrical shock.

To Remove the Pressure Switch

1. Unplug washer or disconnect power.
2. Turn off water supply to washer.
3. Perform the procedures on page 4-8, “Removing the Top Panel” prior to performing the following steps.
4. The pressure switch is located on the right panel toward the front. Disconnect the pressure switch harness (see Figure 1)
5. Remove the hose from the pressure switch (see Figure 1).
6. Turn the pressure switch 90° and to disengage the switch from its mounting bracket. Remove switch from the washer.

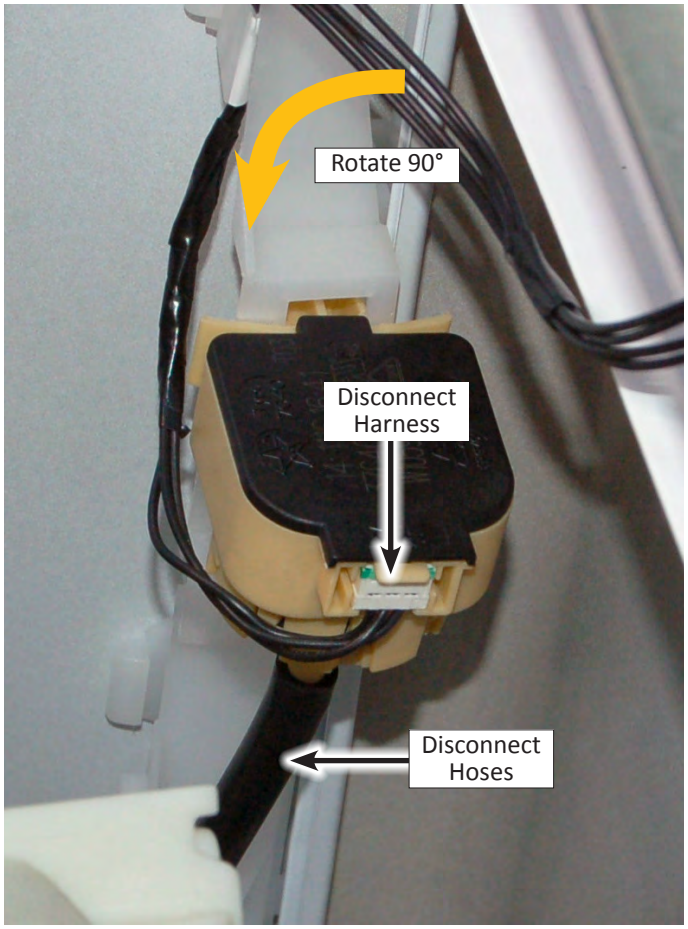


Figure 1

Removing the Interference Filter

⚠ WARNING



Electrical Shock Hazard

Disconnect power before servicing.

Replace all parts and panels before operating.

Failure to do so can result in death or electrical shock.

To Remove the Interference Filter

1. Unplug washer or disconnect power.
2. Turn off water supply to washer.
3. Perform the procedures on page 4-8, “Removing the Top Panel” prior to performing the following steps.
4. Disconnect the Interference Filter’s Line (L) and Neutral (N) terminals and output connector.

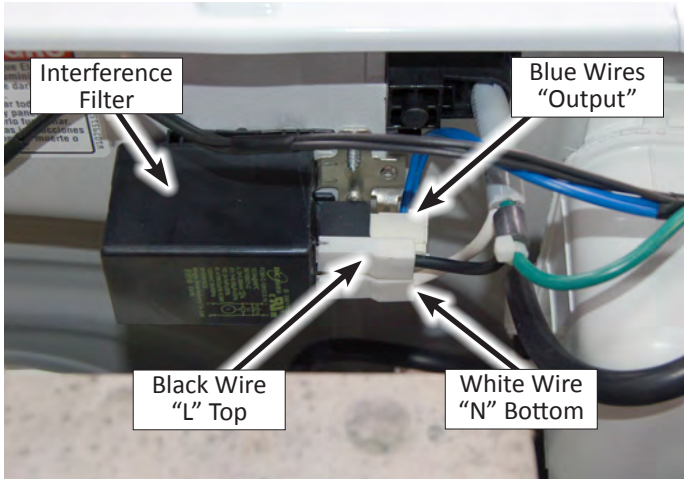


Figure 1

5. Using a Phillips screwdriver, remove the two (2) screws securing the interference filter to the back panel. Slide the filter horizontally to disengage from the back panel and remove filter from washer.

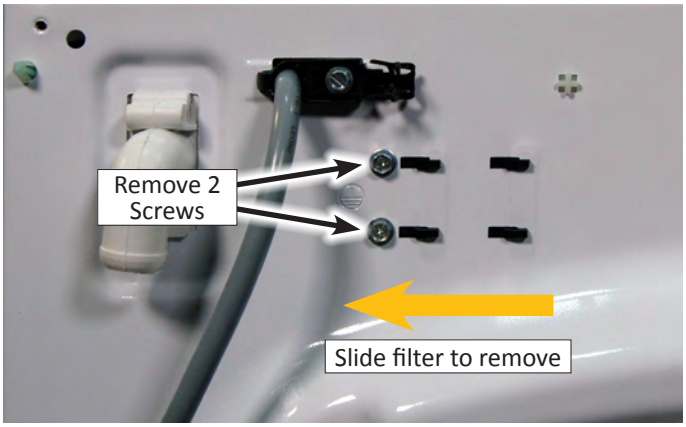


Figure 2

6. When reinstalling the filter, the black wire is on top and the red wire is on the bottom (see Figure 1).

Interference Filter

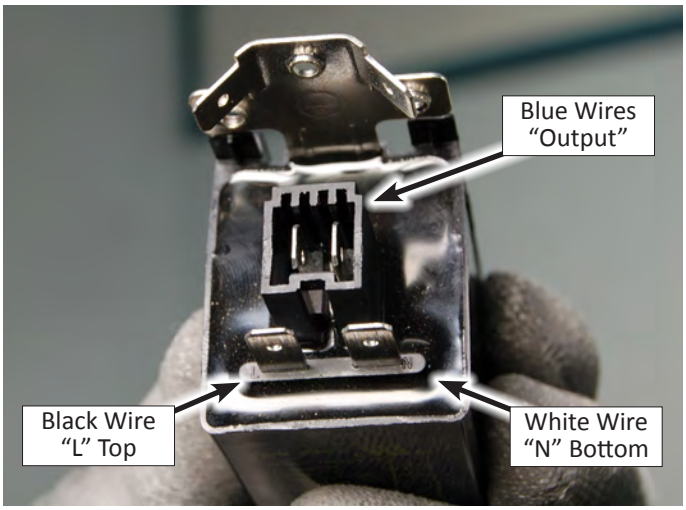


Figure 3 - Interference Filter

Removing the Dispenser Housing

WARNING

Electrical Shock Hazard

Disconnect power before servicing.

Replace all parts and panels before operating.

Failure to do so can result in death or electrical shock.

To Remove the Dispenser Housing

1. Unplug washer or disconnect power.
2. Turn off water supply to washer.
3. Perform the procedures on page 4-8, “Removing the Top Panel” prior to performing the following steps.
4. Disconnect the two (2) hoses from the dispenser housing (see Figure 1).

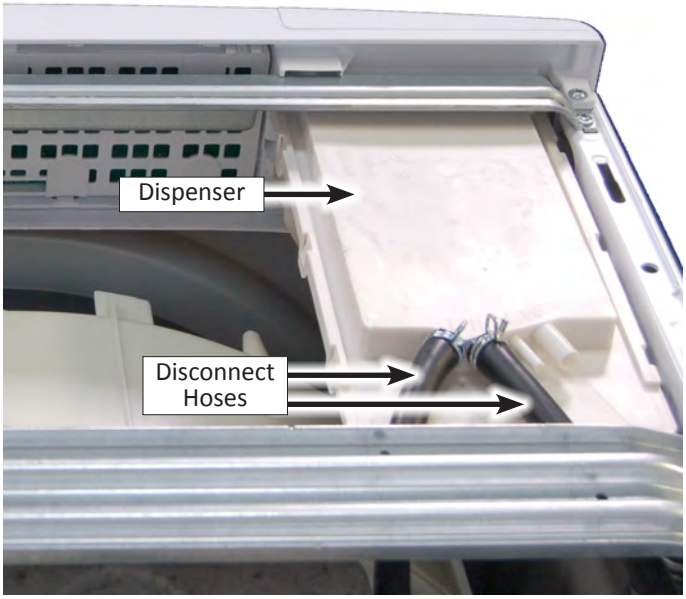


Figure 1

5. Remove the detergent drawer from the housing.
6. Use a Torx 20 driver to remove the screw from the located above the detergent drawer opening (see Figure 2).

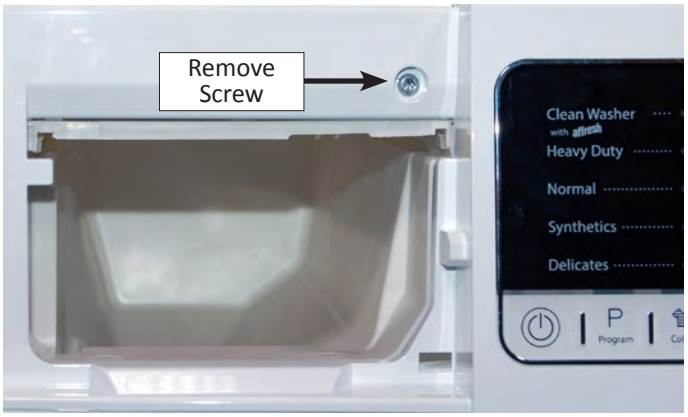


Figure 2

7. Remove the “dispenser to tub” hose from the bottom of the dispenser.
8. Unclip the top of the dispenser housing and remove housing from washer.

Inlet Hose Connections

The inlet hoses must be connected properly according to position marks on dispenser cover. The Prewash Valve (bottom valve) is connected to the connector marked “I” and the Main Wash Valve (top valve) is connected to the connector marked “II”.
NOTE: Dispenser connector’s “V” & “HF” are used.



Figure 3

Removing the Appliance Control Unit (ACU)

⚠ WARNING



Electrical Shock Hazard

Disconnect power before servicing.

Replace all parts and panels before operating.

Failure to do so can result in death or electrical shock.

To Remove the Appliance Control Unit (ACU)

The Appliance Control Unit (ACU) is located at the bottom-right corner of the washer.

1. Unplug washer or disconnect power.
2. Turn off water supply to washer.
3. Disconnect cold inlet water hose and remove the drain hose from the standpipe or laundry tub.
4. Using a 7 mm nut driver, remove hex-head screw used to secure the ACU to the back panel (See Figure 1).

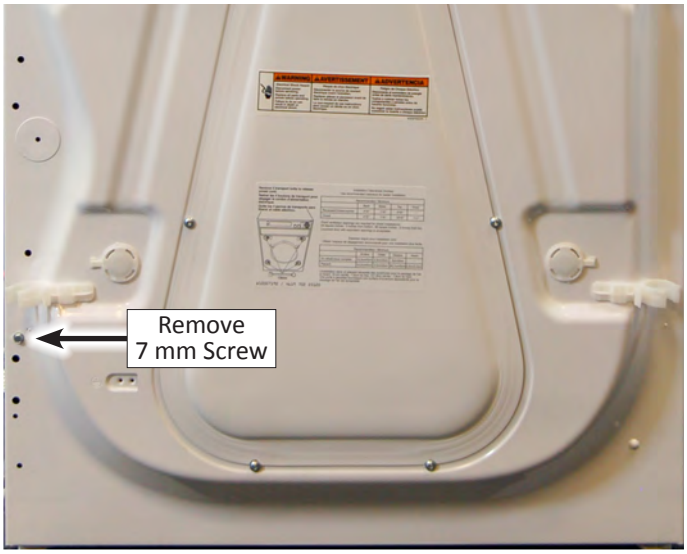


Figure 1

5. Gently lay the washer on its right side (place a 2 x 4 or similar sized object on the floor prior to laying the washer on its side to elevate the washer slightly).
6. Disconnect the drain hose from the ACU hose clip.

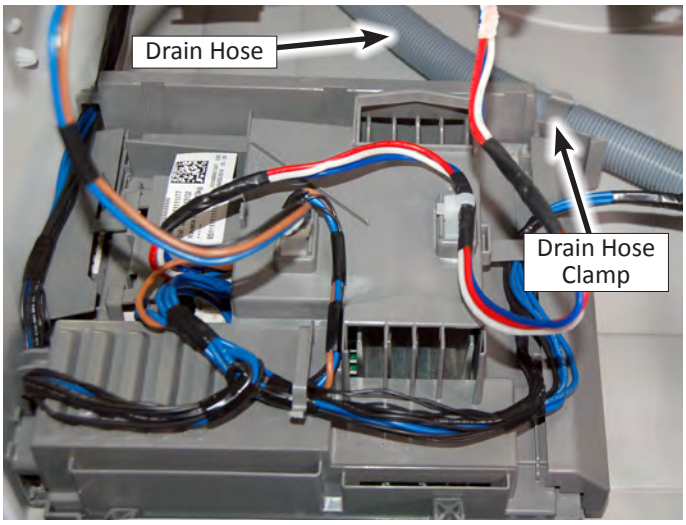


Figure 2

7. Lift up on the plastic release lever attached to the ACU. At the same time, slide the ACU to the right (toward the suspension dampers), freeing the ACU tabs from the slots in the washer cabinet. See Figure 3.

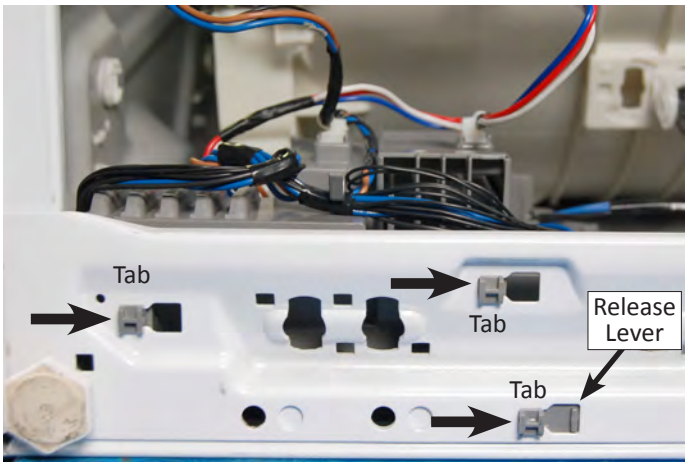


Figure 3

8. With the ACU detached, the connector covers can now be opened to access or unplug the connectors.

Removing the Heater

⚠ WARNING



Electrical Shock Hazard

Disconnect power before servicing.

Replace all parts and panels before operating.

Failure to do so can result in death or electrical shock.

To Remove the Heater and Thermistor

1. Unplug washer or disconnect power.
2. Turn off water supply to washer.
3. Disconnect cold inlet water hose and remove the drain hose from the standpipe or laundry tub.
4. Remove four (4) 7 mm hex-head screws securing the rear access panel to the back panel as indicated in Figure 1. Remove the rear access panel.



Figure 1

5. Remove all connectors from the heater and temperature thermistor (see Figure 2).

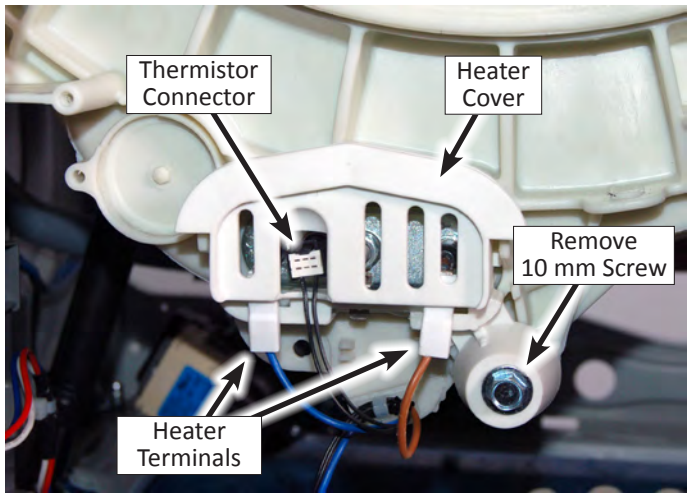


Figure 2

6. Remove the 10 mm screw securing the heater cover to the tub. Remove the heater cover.
7. Loosen the heater's 10 mm compression nut (to the right of the thermistor), but do not remove it completely.
8. Gently pull the heater assembly from the tub.

Reinstall Notes

1. For reinstallation, make sure the new heater is going to be put underneath the clamp that is fixed on the bottom of the tub.
2. Turn the drum slowly after the new heater has been installed, to make sure the heater is not touching the drum.
3. Run cycle for leak testing.

Removing the Console/User Interface

⚠ WARNING



Electrical Shock Hazard

Disconnect power before servicing.

Replace all parts and panels before operating.

Failure to do so can result in death or electrical shock.

To Remove the Console/User Interface

1. Unplug washer or disconnect power.
2. Turn off water supply to washer.
3. Disconnect cold inlet water hose and remove the drain hose from the standpipe or laundry tub.
4. Perform the procedures on page 4-7, “Removing the Toe Panel” prior to performing the following steps.
5. Perform the procedures on page 4-8, “Removing the Top Panel” prior to performing the following steps.
6. Remove the Console/User Interface.
   a. Remove the detergent drawer from the housing.
   b. Remove 7 mm hex-head screw above dispenser drawer opening (see Figure 1).

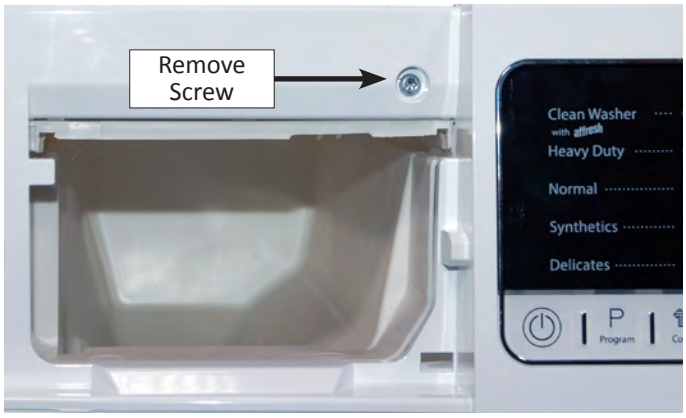


Figure 1

   c. Disconnect UI connector (see Figure 2).

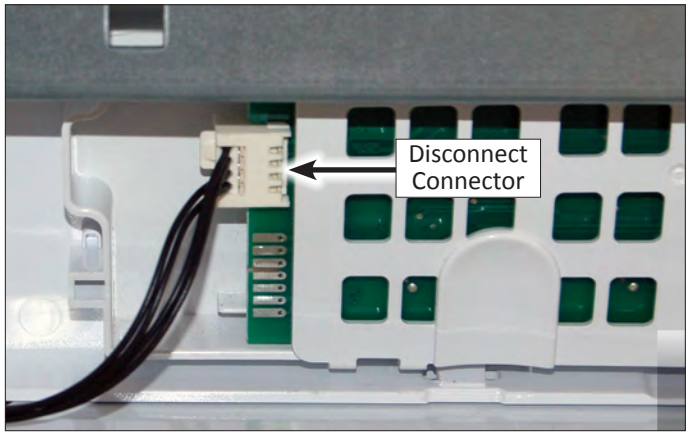


Figure 2

   d. Remove the 2 upper 7 mm screws securing the Console to the control bracket (see Figure 3).

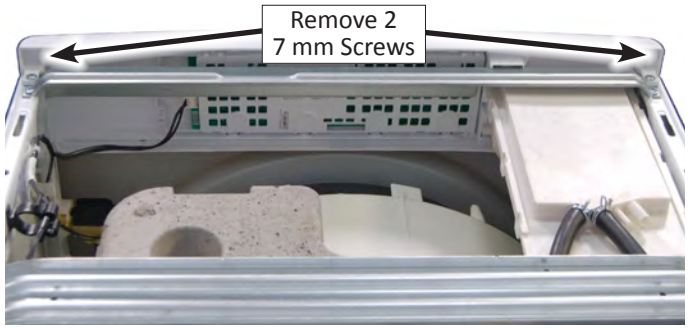


Figure 3

   e. Remove the Console/UI assembly

7. To disassemble the User Interface (UI) for replacement, the cycle selector knob must be removed (see Figure 4).
   a. From the rear of the UI board, push the small white pin, releasing the knob cover.
   b. To remove the inner knob frame from its support, unlock the three (3) inner hooks by prying each with a small screwdriver.
   c. Unclip and separate the UI from its housing.

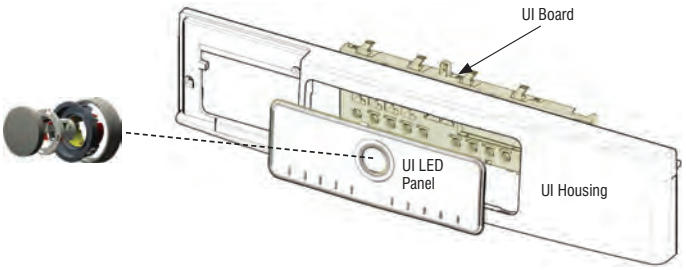


Figure 4

Removing the Front Panel Assembly

⚠ WARNING



Electrical Shock Hazard

Disconnect power before servicing.

Replace all parts and panels before operating.

Failure to do so can result in death or electrical shock.

To Remove the Front Panel Assembly

1. Unplug washer or disconnect power.
2. Turn off water supply to washer.
3. Disconnect cold inlet water hose and remove the drain hose from the standpipe or laundry tub.
4. Perform the procedures on page 4-7, “Removing the Toe Panel” prior to performing the following steps.
5. Perform the procedures on page 4-8, “Removing the Top Panel” prior to performing the following steps.
6. Perform the procedures on page 4-15, “Remove the Console/User Interface” prior to performing the following steps.
7. Using a Phillips screwdriver, remove the two (2) screws securing the door hinge to the washer front panel (see Figure 1). Remove washer door and set aside.

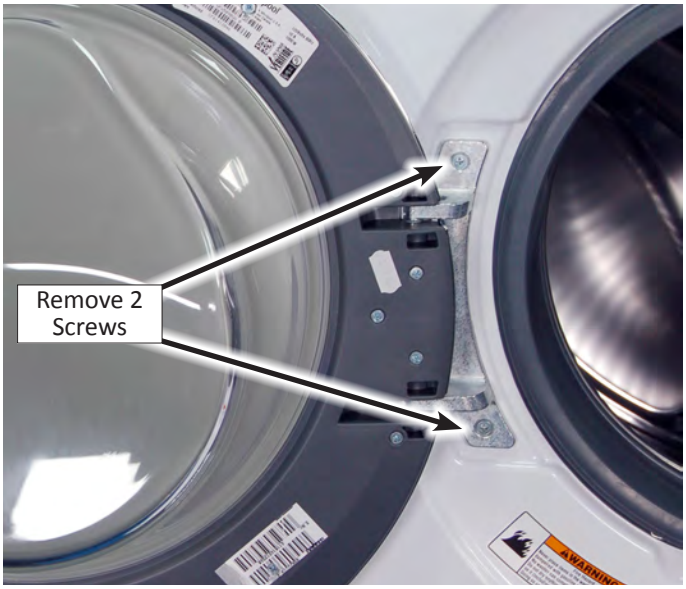


Figure 1

8. Remove the bellows spring clamp. Pull bellows away from door opening (see Figure 2).



Figure 2

9. Remove three (3) lower front panel 7 mm screws.
10. Remove two (2) upper front panel 7 mm screws.
11. Lift up front panel to separate panel from cabinet.
NOTE: The door lock harness is still connected to the lock assembly. Disconnect the door lock harness and then set aside front panel for reassembly.

Removing the Drain Pump & ECO Ball

⚠ WARNING



Electrical Shock Hazard

Disconnect power before servicing.

Replace all parts and panels before operating.

Failure to do so can result in death or electrical shock.

To Remove the Drain Pump (via Front Panel)

1. Unplug washer or disconnect power.
2. Turn off water supply to washer.
3. Disconnect cold inlet water hose and remove the drain hose from the standpipe or laundry tub.
4. Perform the procedures on page 4-7, “Removing the Toe Panel” prior to performing the following steps.
5. Perform the procedures on page 4-8, “Removing the Top Panel” prior to performing the following steps.
6. Perform the procedures on page 4-15, “Remove the Console/User Interface” prior to performing the following steps.
7. Perform the procedure on page 4-16, “Remove the Front Panel Assembly” prior to performing the following steps.
8. Place a shallow pan below the pump to catch any water that may be left in the system when the drain filter is removed.
9. Disconnect the drain pump harness (see Figure 1).

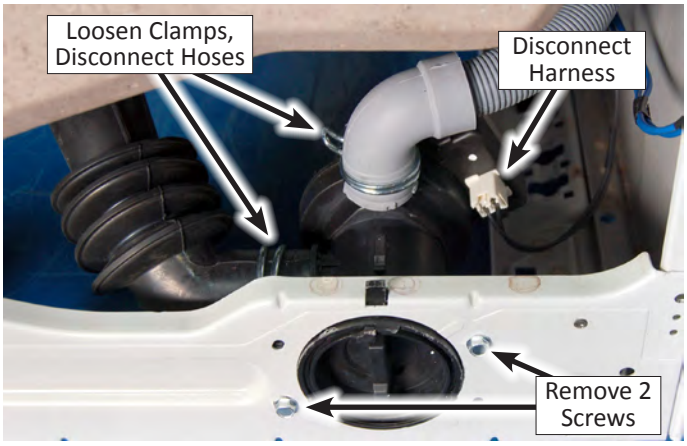


Figure 1 - Front Panel Access

10. Disconnect the pump to drain hose by squeezing the ears of the clamp and pulling the hose off. Note the notch on the hose and the locating arrow on the pump that it aligns with for reinstallation. See Figure 1.
11. Disconnect the tub to pump hose from the pump by squeezing the ears of the clamp and pulling the hose off (Figure 1).
12. Remove the two (2) 7 mm hex head screws securing the pump to the washer (see Figure 1). Remove Drain Pump.

To Remove the Drain Pump (via Washer Bottom)

1. Unplug washer or disconnect power.
2. Turn off water supply to washer.
3. Disconnect cold inlet water hose and remove the drain hose from the standpipe or laundry tub.
4. Perform the procedures on page 4-7, “Removing the Toe Panel” prior to performing the following steps.
5. Place a shallow pan below the pump to catch any water that may be left in the system when the drain filter is removed.
6. Gently lay the washer on its back side (place a 2 x 4 or similar sized object on the floor prior to laying the washer on its side to elevate the washer slightly). See Figure 2.

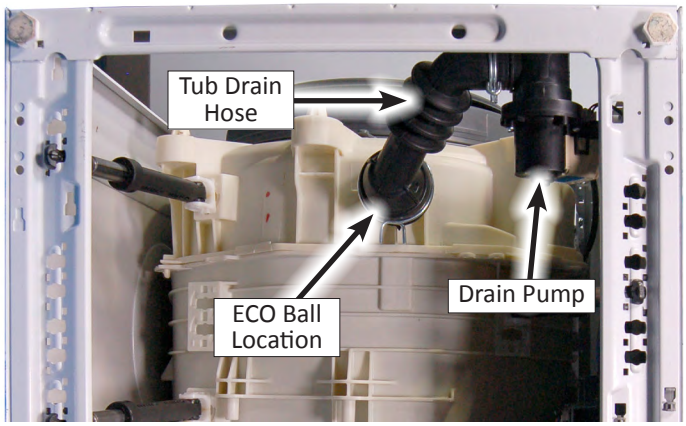


Figure 2

7. Disconnect the drain pump harness (see Figure 1).
8. Disconnect the pump to drain hose by squeezing the ears of the clamp and pulling the hose off. Note the notch on the hose and the locating arrow on the pump that it aligns with for reinstallation. See Figure 1.
9. Disconnect the tub to pump hose from the pump by squeezing the ears of the clamp and pulling the hose off. (Figure 1)
10. Remove the two (2) 7 mm hex head screws securing the pump to the washer (see Figure 1). Remove Drain Pump.

ECO BALL REPLACEMENT

The ECO Ball (location shown in Figure 2) can be replaced as a separate part or as the complete Tub to Pump Hose Assembly as shown in the figure to the right.

#7 - Tub to Pump Hose Ass’y

#8 - ECO Ball

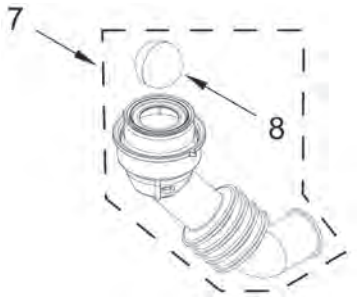


Figure 3

Removing the Direct Drive Motor

WARNING



Electrical Shock Hazard

Disconnect power before servicing.

Replace all parts and panels before operating.

Failure to do so can result in death or electrical shock.

To Remove the Drive Motor

1. Unplug washer or disconnect power.
2. Turn off water supply to washer.
3. Disconnect cold inlet water hose and remove the drain hose from the standpipe or laundry tub.
4. Remove four (4) 7 mm hex-head screws securing the rear access panel to the back panel as indicated in Figure 1. Remove the rear access panel.



Figure 1

5. Block the rotor by inserting a small 4 mm flat-blade screwdriver into the slot at the back of the rotor as illustrated in Figure 2. Align slot in rotor with receptacle on back of tub (see Figure 2 & 3).



Figure 2 - Lock Rotor Slot

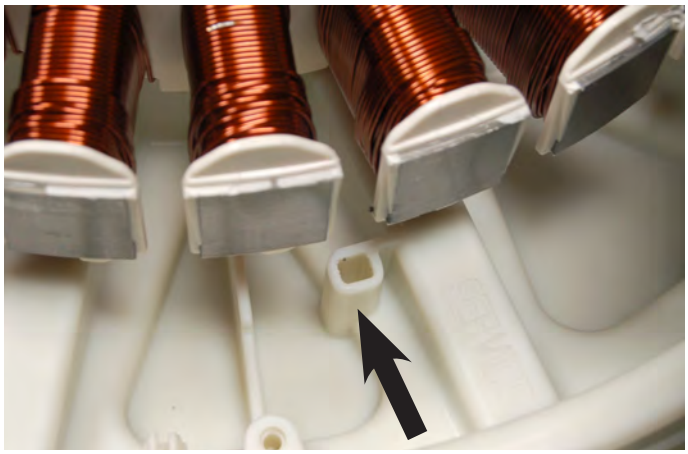


Figure 3 - Lock Rotor Receptacle

Removing the Direct Drive Motor (continued)

6. While the rotor is blocked, use a ratchet and a Torx 40 bit to loosen the rotor screw as shown in Figure 4.

   NOTE: The same procedure must be performed when reattaching the rotor during reinstallation.



Figure 4

7. After the rotor screw is removed, push the wash unit towards the front and lock in place with a 2 x 4 or wood block. This allows for room to remove the rotor.
8. Remove the rotor from the stator by pulling it backwards.
9. Unplug the motor connector from the ACU.
10. Use a 7 mm driver to remove the two (2) clamp screws securing the harness to the back of the tub.
11. Remove two (2) additional harness clips (push mount wire ties).
12. Use an 8 mm socket to remove the six (6) stator bolts as illustrated in Figure 5. Remove the stator assembly.

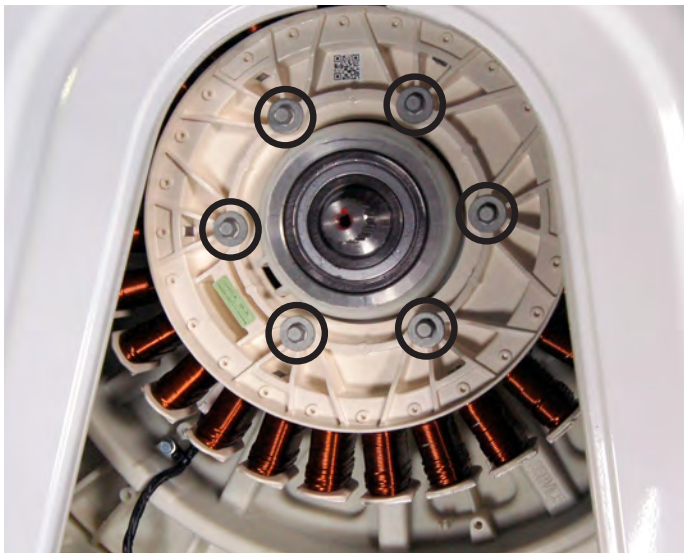


Figure 5

IMPORTANT: Be sure to protect the rotor and stator from dust or debris during disassembly and reassembly. Debris on the rotor or stator can damage the motor during operation.

Removing the Tub Assembly

⚠ WARNING



Electrical Shock Hazard

Disconnect power before servicing.

Replace all parts and panels before operating.

Failure to do so can result in death or electrical shock.

To Remove the Tub Assembly

1. Unplug washer or disconnect power.
2. Turn off water supply to washer.
3. Disconnect cold inlet water hose and remove the drain hose from the standpipe or laundry tub.
4. Perform the procedures on page 4-7, “Removing the Toe Panel” prior to performing the following steps.
5. Perform the procedures on page 4-8, “Removing the Top Panel” prior to performing the following steps.
6. Perform the procedures on page 4-12, “Removing the Dispenser Housing” prior to performing the following steps.
7. Perform the procedures on page 4-15, “Removing the Console/User Interface” prior to performing the following steps.
8. Perform the procedure on page 4-16, “Removing the Front Panel Assembly” prior to performing the following steps.
9. Perform the procedure on page 4-18, “Removing the Direct Drive Assembly” prior to performing the following steps.
10. Remove all connectors from the heater and temperature thermistor (see Figure 1).

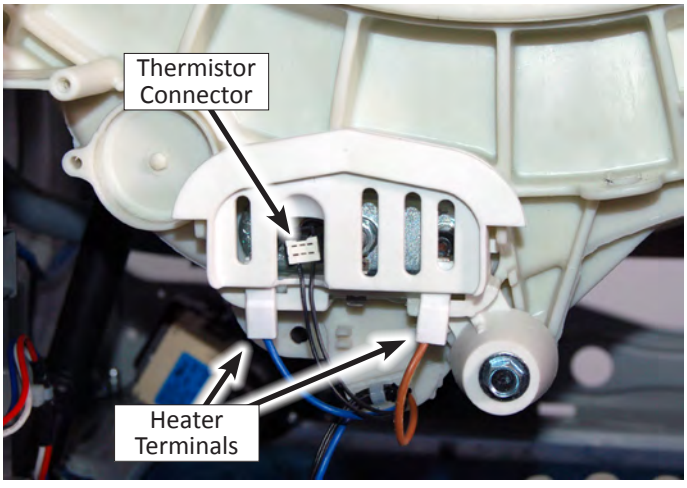


Figure 1

11. Use a 7 mm hex head driver to remove the four (4) screws securing the cross top bracket to the side panels. Remove cross top bracket.
12. Use a Torx 15 driver to remove the two (2) screws securing the front control bracket to the side panels. Remove front control bracket.
13. Use a ratchet and a Torx 50 bit to remove the three (3) screws securing the top counter weight to the top of the tub assembly (see Figure 2). Remove counter weight and set aside for reassembly.

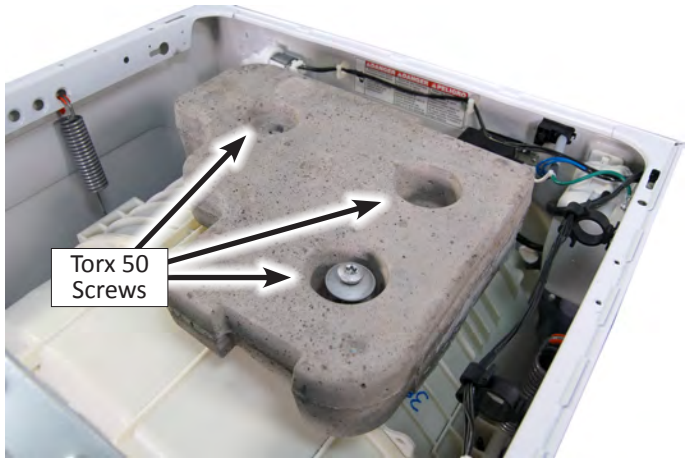


Figure 2

14. Use a ratchet and a Torx 50 bit to remove the three (3) screws securing the front counter weight to the front of the tub assembly (see Figure 3). Remove counter weight and set aside for reassembly.

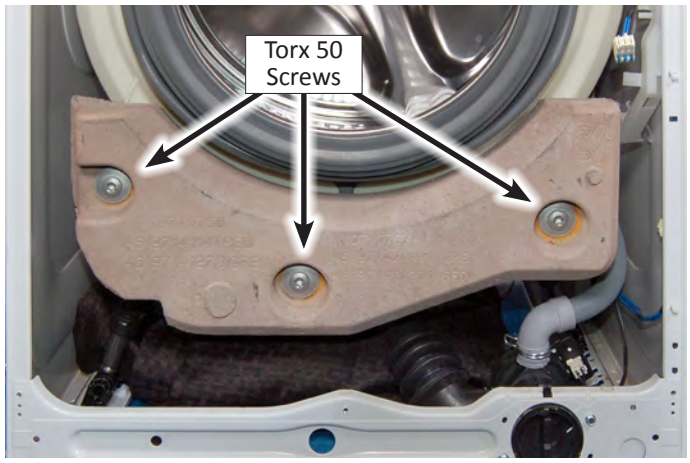


Figure 3

Removing the Tub Assembly (continued)

15. Tip washer onto its side. Mark the current damper locations on the bottom of the washer. Twist the dampers 1/4 turn to disengage from the tub, then pull dampers away from tub assembly.

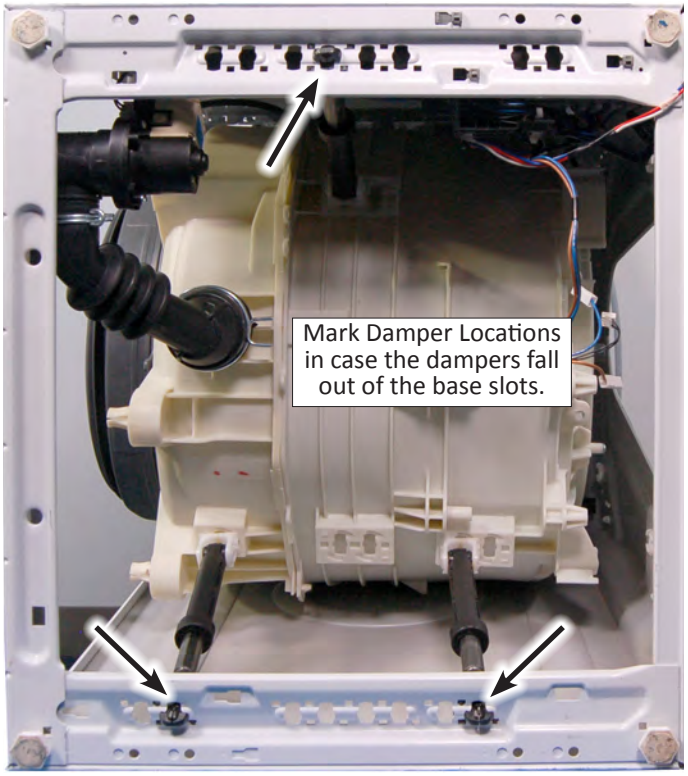


Figure 4

16. Disconnect drain hose and pressure hose from the tub assembly.

17. Remove any harnesses that are secured or wire-tied to the tub assembly.

18. Return washer to its upright position. Disconnect the Equalization Tank hose from the tub assembly.

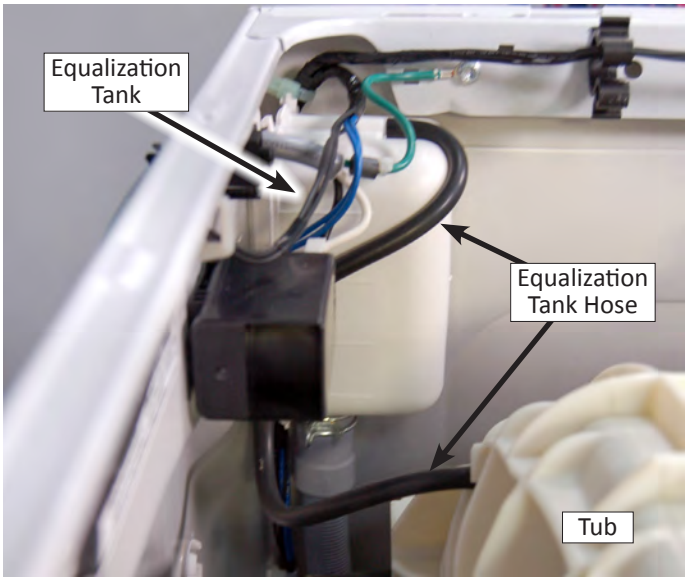


Figure 5

19. Lift up tub assembly to disengage the right and left suspension springs. Lift and remove tub from the washer.

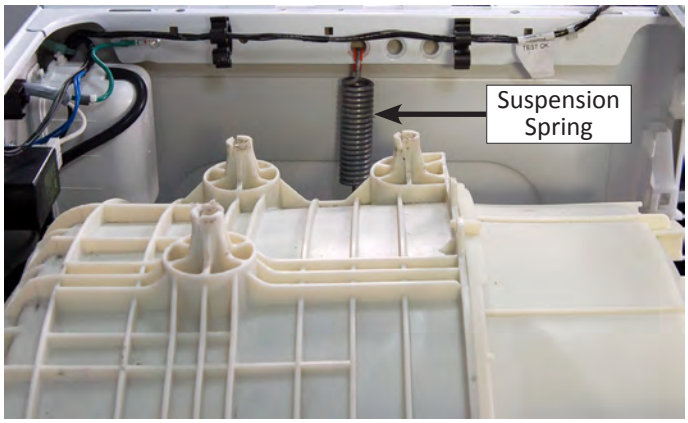


Figure 6

20. Reverse procedure to reinstall the Tub Assembly.

Notes

PRODUCT SPECIFICATIONS & WARRANTY INFORMATION SOURCES

IN THE UNITED STATES:

FOR PRODUCT SPECIFICATIONS AND WARRANTY INFORMATION CALL:

FOR WHIRLPOOL PRODUCTS: 1-800-253-1301

FOR TECHNICAL ASSISTANCE WHILE AT THE CUSTOMER'S HOME CALL:

THE TECHNICAL ASSISTANCE LINE: 1-800-832-7174

HAVE YOUR STORE NUMBER READY TO IDENTIFY YOU AS AN AUTHORIZED IN-HOME SERVICE PROFESSIONAL

FOR LITERATURE ORDERS (CUSTOMER EXPERIENCE CENTER):

PHONE: 1-800-851-4605

FOR TECHNICAL INFORMATION AND SERVICE POINTERS:

www.servicematters.com

IN CANADA:

FOR PRODUCT SPECIFICATIONS AND WARRANTY INFORMATION CALL

PHONE: 1-800-461-5681

FOR TECHNICAL ASSISTANCE WHILE AT THE CUSTOMER'S HOME CALL:

THE TECHNICAL ASSISTANCE LINE: 1-800-488-4791

HAVE YOUR STORE NUMBER READY TO IDENTIFY YOU AS AN AUTHORIZED IN-HOME SERVICE PROFESSIONAL

Whirlpool 1.9 & 2.3 CU FT Compact Front Load Washers

W11040042A