



SERVICE MANUAL

Maytag Commercial HE Front Loading Washers



**50Hz MODELS:
MHN33PNCGW0 and MHN33PDCGW0**

TECHNICAL EDUCATION

FORWARD

This Maytag Service Manual, (Part No. W10900432), provides the Commercial Laundry Service Professional with information on the installation, operation, and service of the single load coin and non coin Model 33 Series Commercial HE Front Loading Washers. For specific information on the model being serviced, refer to the “Installation Instructions”, or “Tech Sheet” provided with the washer. The Wiring Diagrams used in this Service Manual are typical and should be used for training purposes only. Always use the Wiring Diagram supplied with the product when servicing the washer.

GOALS AND OBJECTIVES

The goal of this Service Manual is to provide information that will enable the Commercial Laundry Service Professional to properly diagnose malfunctions and repair the Commercial HE Front Loading Washers. The objectives of this Service Manual are to:

- Understand and follow proper safety messages.
- Successfully diagnose installation related problems.
- 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 Commercial Laundry Service Professionals.

- Phillips is a registered trademark of Phillips Screw Company.

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INTERACTIVE SERVICE MANUAL INSTRUCTIONS

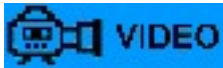
Click the mouse on any topic in the table of contents to go directly to that section.
Click the mouse on any link that says (See page ?-?) to go directly to the page referenced.
Click the mouse on any button in the links section below to open the attached document.



This symbol means a video clip is available. Click the mouse on the camera icon to view the video. To close the movie, click the X box at the top corner of the video window.

System requirements to view the video clips in this manual are:

Windows 2000 or higher, Adobe® Acrobat® Reader® version 6 or higher,
Windows Media Player for PC, QuickTime Player for Macintosh computers.



VIEW ENTIRE SERVICE VIDEO

DOCUMENT LINKS

**Installation and
Programming Instructions**

Tech Sheet

GENERAL

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:



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



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.

IMPORTANT

Electrostatic Discharge (ESD) Sensitive Electronics

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

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

-OR-

Touch your finger repeatedly to a green earth connection point or unpainted metal in the appliance.

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

MODEL AND SERIAL NUMBER DESIGNATIONS

MODEL NUMBER	M	HN	33	PD	C	W	W	0
BRAND M Maytag								
DRIVE TYPE HN Horizontal Axis Washer Non-Pedestal HP Horizontal Axis Washer w/Pedestal AH Automatic Horizontal Axis Washer LG Commercial Stacked Washer/Dryer								
PRODUCT 22 Commercial HE Front Load Washer Ends in 2011 30-33 Commercial HE Front Load Washer Starts in 2011								
CONTROL TYPE PD Processor Coindrop PR Processor Reader PN Processor Non-coin CS Mechanical Coinslide MN Mechanical Non-coin								
MARKETING CODE A First series C Third in series (1st in Series for MHN33 only) B Second series								
VOLTAGE CODE W 120V-60Hz (US) X 120V-60Hz (Canada) G 220-240V-50Hz (Export Models)								
COLOR W White								
ENGINEERING CHANGE (NUMERIC)								

SERIAL NUMBER DESIGNATIONS

SERIAL NUMBER	C	6	35	10901
DIVISION RESPONSIBILITY C Clyde, Ohio HL Monterrey, MX M Marion, Ohio				
YEAR OF PRODUCTION W 2008 2 2012 6 2016 Y 2009 3 2013 7 2017 0 2010 4 2014 8 2018 1 2011 5 2015 9 2019				
WEEK OF PRODUCTION 35 35th Week in the calendar year				
MANUFACTURING SEQUENCE NUMBER				

DATA PLATE AND TECH SHEET LOCATION



SPECIFICATIONS

WASHER SPECIFICATIONS	
EXPORT MODEL	MHN33PN
MOTOR	
Variable-speed, reversible, thermoprotected, high-efficiency, controlled induction	Yes
Wash—HP (kw)	.09 (.07)
Extract—HP (kw)	.54 (.40)
Average energy consumption per cycle (kWh)	.054
CAPACITY	
Cylinder volume—cu. ft. (liters)	3.1 (88)
Cylinder diameter—in. (mm)	21.6 (547)
Cylinder depth—in. (mm)	13.4 (341)
WATER INLET HOSE	
Ft. (m)	4 (1.22)
DRAIN HOSE	
Ft. (m)	6 (1.83)
APPROXIMATE WATER USAGE—GALLONS (LITERS)	
Average hot water usage, hot water cycle	2.71 (10.26)
Average hot water usage, warm water cycle	.71 (2.69)
Average total water usage per cycle	10.71 (40.5)*
Modified Energy Factor (MEF)	2.45
Water Factor (WF)	3.50
ELECTRICAL RATING	
Export model—voltage	220–240V/50Hz
BREAKER/FUSE MIN. REQUIREMENTS	
Export model—amps	10
WASH SPEED—RPM	40
EXTRACT SPEED—MAX RPM/MAX G-FORCE	1,000/300
WATER SUPPLY PRESSURE	
Psi (bar)	20–100 (1–8)
SOUND LEVEL (export model only)	
Sound pressure level, Lpa (dbA) (Kpa: ± 3.6 dbA)	58
ADJUSTABLE LEVELING LEGS	Yes
COLOR	White
APPROXIMATE WEIGHT	
Crated—lbs. (kg)	244 (111)
Uncrated—lbs. (kg)	235 (107)
DIMENSIONS	
Width—in. (mm)	27 (686)
Depth—in. (mm) includes handle	28.81 (732)
Height—in. (mm)	37.81 (961)
Door opening diameter—in. (mm)	14.25 (362)
OPTIONAL PEDESTAL ADD:	
Height—in. (mm)	2.75 (70)
<p>*Average based on DOE J1 testing with factory preset cycles. Dimensions are for planning purposes only. See specific instructions for proper installation. Because of continuous product improvement, Maytag reserves the right to change specifications without notice.</p>	

WARRANTY

MAYTAG® COMMERCIAL WASHER, DRYER, STACKED DRYER/ DRYER, COMMERCIAL STACK LAUNDRY, AND MULTI-LOAD COIN OPERATED COMMERCIAL WASHERS AND DRYERS WARRANTY

LIMITED WARRANTY ON PARTS

For the first five years from the date of purchase, when this commercial appliance is installed, maintained and operated according to instructions attached to or furnished with the product, Maytag brand of Whirlpool Corporation (hereafter "Maytag") will pay for factory specified parts or original equipment manufacturer parts to correct defects in materials or workmanship. Proof of original purchase date is required to obtain service under this warranty.

ITEMS MAYTAG WILL NOT PAY FOR

1. All other costs including labor, transportation, or custom duties.
 2. Service calls to correct the installation of your commercial appliance, to instruct you how to use your commercial appliance, to replace or repair fuses, or to correct external wiring or plumbing.
 3. Repairs when your commercial appliance is used for other than normal, commercial use.
 4. Damage resulting from improper handling of product during delivery, theft, accident, alteration, misuse, abuse, fire, flood, acts of God, improper installation, installation not in accordance with local electrical or plumbing codes, or use of products not approved by Maytag.
 5. Pickup and Delivery. This commercial appliance is designed to be repaired on location.
 6. Repairs to parts or systems resulting from unauthorized modifications made to the commercial appliance.
 7. The removal and reinstallation of your commercial appliance if it is installed in an inaccessible location or is not installed in accordance with published installation instructions.
 8. Chemical damage is excluded from all warranty coverage.
 9. Changes to the building, room, or location needed in order to make the commercial appliance operate correctly.
 10. Repairs made by a non-Whirlpool authorized service technician.
-

DISCLAIMER OF IMPLIED WARRANTIES; LIMITATIONS OF REMEDIES

CUSTOMER'S SOLE AND EXCLUSIVE REMEDY UNDER THIS LIMITED WARRANTY SHALL BE PRODUCT REPAIR AS PROVIDED HEREIN. IMPLIED WARRANTIES, INCLUDING WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE, ARE LIMITED TO ONE YEAR OR THE SHORTEST PERIOD ALLOWED BY LAW. WHIRLPOOL SHALL NOT BE LIABLE FOR INCIDENTAL OR CONSEQUENTIAL DAMAGES. SOME STATES AND PROVINCES DO NOT ALLOW THE EXCLUSION OR LIMITATION OF INCIDENTAL OR CONSEQUENTIAL DAMAGES, OR LIMITATIONS ON THE DURATION OF IMPLIED WARRANTIES OF MERCHANTABILITY OR FITNESS, SO THESE EXCLUSIONS OR LIMITATIONS MAY NOT APPLY TO YOU. THIS WARRANTY GIVES YOU SPECIFIC LEGAL RIGHTS AND YOU MAY ALSO HAVE OTHER RIGHTS, WHICH VARY FROM STATE TO STATE OR PROVINCE TO PROVINCE.

If you need service, please contact your authorized Maytag® Commercial Laundry distributor. To locate your authorized Maytag® Commercial Laundry distributor, or for web inquiries, visit www.MaytagCommercialLaundry.com.

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For written correspondence:
Maytag® Commercial Laundry Service Department
2000 M-63 North
Benton Harbor, Michigan 49022 USA

WASHER DISPOSAL



This appliance is marked according to the European directive 2012/19/EU on Waste Electrical and Electronic Equipment (WEEE).

By ensuring this product is disposed of correctly, you will help avoid potential negative consequences for the environment and human health, which could otherwise be caused by inappropriate waste handling of this product.

The symbol on the product, or on the documents accompanying the product, indicates that this appliance may not be treated as household waste. Instead it shall be handed over to the applicable collection point for the recycling of electrical and electronic equipment.

Disposal must be carried out in accordance with local environmental regulations for waste disposal.

For more detailed information about treatment, recovery and recycling of this product, please contact your local city office, your household waste disposal service or the shop where you purchased the product.

INSTALLATION REQUIREMENTS

For complete installation instructions, see the Document links page.

TOOLS AND PARTS

Gather required tools and parts before starting installation. Parts supplied are in the washer spin basket. Read and follow the instructions provided with any tools listed here.

Tools needed to connect the water inlet hoses:

- Pliers (that open to 39.5mm {1 9/16"})
- Flashlight (optional)

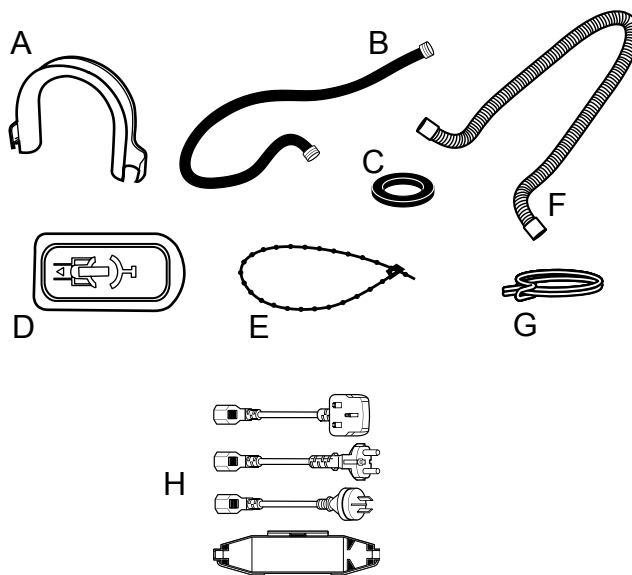
Tools needed for installation:

- 13mm (1/2") and 14mm (9/16") sockets or wrenches
- T-20 Security screwdriver
- 1/4" Nut driver
- Level
- Wood block
- Ruler or measuring tape

The installation may require additional parts.

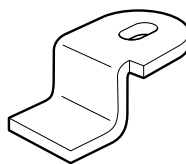
NOTE: Sizes of hardware are provided in this manual so the technician will know the tool size to remove the hardware, not to identify the thread size. For instance, if a procedure describes a 13mm (1/2") hex nut or a 13mm (1/2") hex head bolt, that description means a 13mm (1/2") socket or wrench will be needed.

Parts supplied:



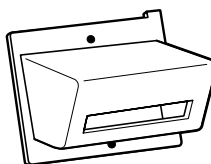
- A. U-shaped hose form
- B. Water inlet hoses (2)
- C. Inlet hose washers (4)
- D. Transit bolt hole plug (4)
- E. Removable tie strap
- F. Drain hose
- G. Hose clamp
- H. Power cord adapter kit

Parts supplied for PD Models:



Service door lock cam

Parts supplied for PN Models:



Card Reader Bezel



Screws (2)

ALTERNATE PARTS

Your installation may require additional parts. If you are interested in purchasing any of the items listed here, contact your authorized Maytag distributor.

If there is a (an)	Purchase item
Laundry tub or standpipe taller than 2.4m (96")	Sump pump system (If not already available)
Overhead sewer	Standard 76L (20 gal.), 762mm (30") tall drain tub or utility sink and sump pump (available from local plumbing suppliers)
Floor drain	Siphon break, Part Number 285834; additional drain hose, Part Number 8318155; and connector kit, Part Number 285835
Drain hose too short	1.2m (4 ft) drain hose extension kit, Part Number 285863
Water faucet beyond reach of fill hoses	2 longer water fill hoses: 1.8m (6 ft) fill hose Part Number 76314 3.0m (10 ft) fill hose Part Number 350008

Whirlpool Corporation, Benton Harbor, Michigan 49022, USA.
 Manufacturer site: Whirlpool Corporation, 119 Birdseye St., Clyde, OH 43410.
 EU representative: Whirlpool Europe s.r.l., Viale Guidao Borghi 27, 21025 Comerio (VA), Italy.

ACCESSORIES

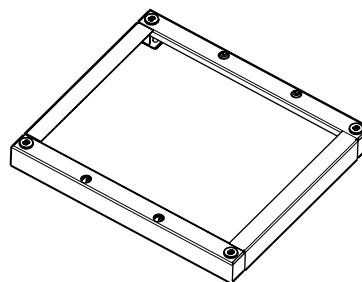
Enhance your washer with these premium accessories. For more high-quality items or to order, contact your authorized Maytag distributor.

Part Number	Accessory
8212526	Washer drip trays, fits under all
31682	All purpose appliance cleaner
1903WH	Laundry supply storage cart
285320	Anti Syphon

OPTIONS

Pedestal


You have the option of purchasing pedestals separately for this washer. The pedestal will add to the total height of the washer.



Optional Pedestal

Pedestal Height	Approximate Height with Washer	Color	Model Number
73mm (2 7/8")	1207mm (47.5")	White	WHP0400VW

LOCATION REQUIREMENTS

⚠ WARNING

Electrical Shock Hazard Plug into a grounded 3 prong outlet. Do not remove ground prong. Do not use an adapter. Do not use an extension cord. Failure to follow these instructions can result in death, fire, or electrical shock.

NOTE: This washer is intended to be used in public areas.

Selecting the proper location for the washer improves performance and minimizes noise and possible washer “walk”.

This washer can be installed under a custom counter, or in a basement, laundry room, closet, or recessed area. (See page 2-5) “Drain System”. Companion appliance location requirements should also be considered. Proper installation is the responsibility of the installer / owner.

What is needed

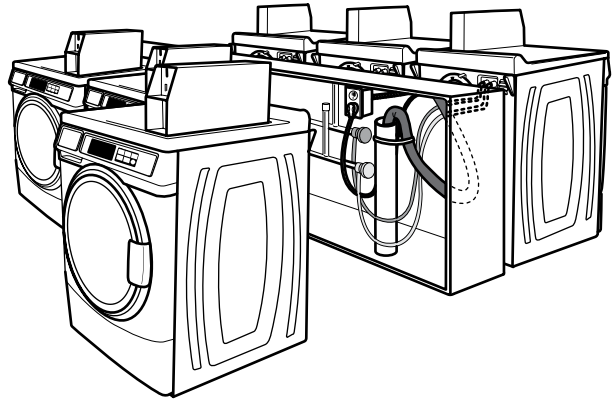
- A water heater set to deliver 49°C (120°F) water to the washer.
- An earthed electrical outlet located within 1.8m (6 ft) of where the power cord is attached to the back of the washer. (See page 2-6) “Electrical Requirements”.
- Hot and cold water taps located within 1.2m (4 ft) of the hot and cold water fill valves, and water pressure of 137.9-689.6 kPa (20-100 psi).
- A level floor with a maximum slope of 2.5cm (1”) under entire washer. Installing the washer on soft floor surfaces, such as carpets or surfaces with foam backing, is not recommended.
- A sturdy and solid floor to support the washer with a total weight (water and load) of 180 kg (400 lbs).

Do not operate the washer in temperatures below 0°C (32°F). Some water can remain in the washer and can cause damage in low temperatures.

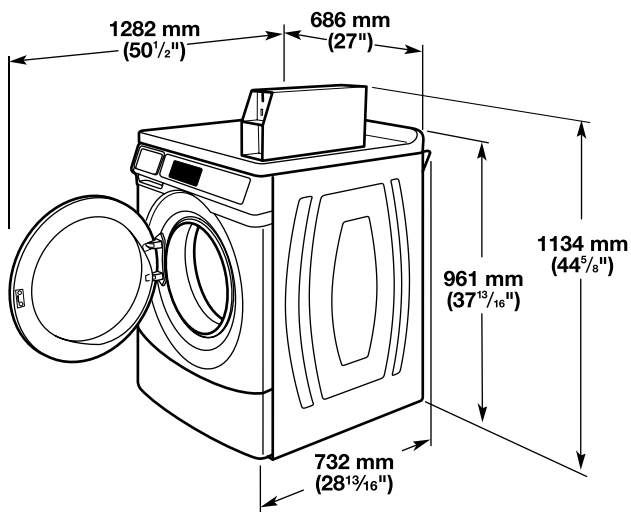
Installation Clearances

- The location must be large enough to allow the washer door to be fully opened.
- Additional spacing should be considered for ease of installation and service. The door opens more than 90°, and it is not reversible.
- Additional clearances might be required for wall, door, and floor moldings.
- Additional spacing of 2.5cm (1") on all sides of the washer is recommended to reduce noise transfer.
- Companion appliance spacing should also be considered.

A floor drain should be provided under a bulkhead. Prefabricated bulkheads with electrical outlets, water inlet lines, and drain facilities should be used only where local codes permit.



Washer Dimensions



Door is not reversible

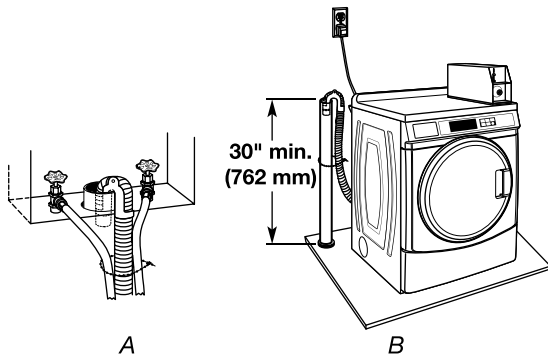
DRAIN SYSTEM

The washer can be installed using the standpipe drain system (floor or wall), the laundry tub drain system, or the floor drain system. Select the drain hose installation method needed. (See page 2-1) "Tools and Parts".

Standpipe drain system: wall or floor (Views A & B)

The standpipe drain requires a minimum diameter standpipe of 5.0cm (2"). The minimum carry-away capacity can be no less than 45.5L (12 gal.) per minute per washer.

The top of the standpipe must be at least 76.2cm (30") high and no higher than 2.4m (96") from the bottom of the washer.

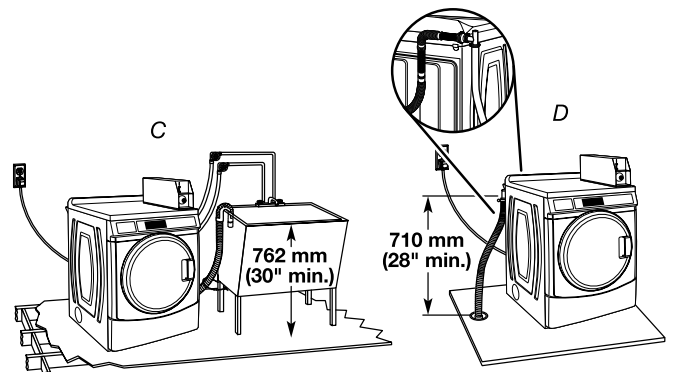


Laundry tub drain system (View C)

Laundry tub needs a minimum 76L (20 gal) capacity. The top of the laundry tub must be at least 76.2cm (30") above the floor.

Floor drain system (View D)

The floor drain system requires a siphon break that may be purchased separately. (See page 2-2) The siphon break must be a minimum of 710mm (28") from the bottom of the washer. Additional hoses might be needed.



ELECTRICAL REQUIREMENTS

⚠ WARNING



Electrical Shock Hazard

**Plug into a grounded 3 prong outlet.
Do not remove ground prong.
Do not use an adapter.
Do not use an extension cord.
Failure to follow these instructions can
result in death, fire, or electrical shock.**

- A 220 / 240 volt, 50 Hz., AC power supply and a 10 or 16 amp circuit breaker or time-delay fuse is required. It is recommended that a separate circuit serving only this washer be provided.
- This washer is equipped with a power supply cord and three extensions to choose from, each having an earthing plug.
- To minimize possible shock hazard, the cord must be plugged in to an earthed socket outlet, earthed in accordance with local codes and ordinances. If a mating outlet is not available, it is the personal responsibility and obligation of the customer to have the properly earthed outlet installed by a qualified electrician.
- If codes permit and a separate earth wire is used, it is recommended that a qualified electrician determine that the earth path is adequate.
- If the supply cord is damaged, it must be replaced by the manufacturer, its service agent, or a qualified person to avoid a hazard.

- Do not earth to a gas pipe.
- Check with a qualified electrician if not sure that the washer is properly earthed.
- Do not have a fuse in the neutral or earth circuit.

EARTHING INSTRUCTIONS

For an earthed, cord-connected washer:
This washer must be earthed. In the event of a malfunction or breakdown, earthing will reduce the risk of electrical shock by providing a path of least resistance for electric current. This washer is equipped with a cord having an equipment-earthing conductor and an earthing plug. The plug must be plugged into an appropriate outlet that is properly installed and earthed in accordance with all local codes and ordinances.

WARNING: Improper connection of the equipment earthing conductor can result in a risk of electric shock. Check with a qualified electrician or serviceman if in doubt as to whether the appliance is properly earthed.

Do not modify the plug provided with the appliance – if it will not fit the outlet, have a proper outlet installed by a qualified electrician.

For a permanently connected washer:
This washer must be connected to an earthed metal, permanent wiring system, or an equipment earthing conductor must be run with the circuit conductors and connected to the equipment-earthing terminal or lead on the washer.

SHIPPING BOLTS - REMOVE

WARNING

Excessive Weight Hazard

Use two or more people to move and install washer.

Failure to do so can result in back or other injury.

1. There are 4 shipping bolts in the back panel of the washer that support the suspension system during transportation.
2. Use a 13mm (1/2") wrench to loosen each of the bolts.
3. Once the bolts are loose, move each one to the center of the hole and remove the bolt, including plastic spacer covering the bolt.
4. Once all 4 bolts are removed, push the power cord plug into the hole in the back of the washer and pull the cord out of the hole at the other side.
5. Cover the holes the power cord came out of with the plastic caps attached to the back of the washer.
6. Pull the drain hose from inside of spin basket and install, with a clamp, on drain port at top right corner of the back panel.
7. Cover the holes the shipping bolts came out of with the plastic hole plugs shipped with the washer.

SHIPPING BOLTS - REINSTALL

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. If washer must be transported after the shipping bolts have been removed, at least 2 shipping bolts must be reinstalled to make sure the washer components are not damaged due to movement of the weights and the outer tub.
2. Unplug washer or disconnect power.
3. Turn off the water supply to the washer.

WARNING

Excessive Weight Hazard

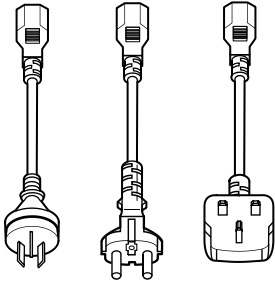
Use two or more people to move and install washer.

Failure to do so can result in back or other injury.

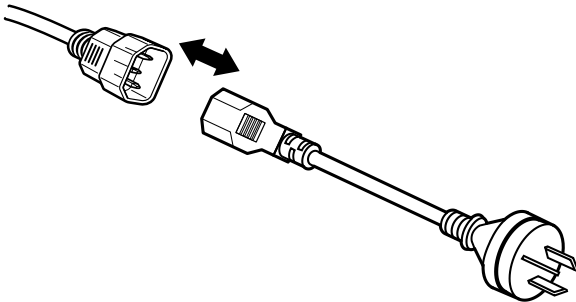
4. Remove the back panel from the washer.
5. Assemble tub spacers onto shipping bolts. Insert each shipping bolt assembly through hole in back brace and into the hole in outer tub. Tighten with a 13mm (1/2") wrench.
6. Slide shipping bolt towards the outer edge of the washer before tightening the bolt completely to secure the spacer in place.
7. Reinstall the back panel before transporting the washer.

POWER CORD INSTALLATION

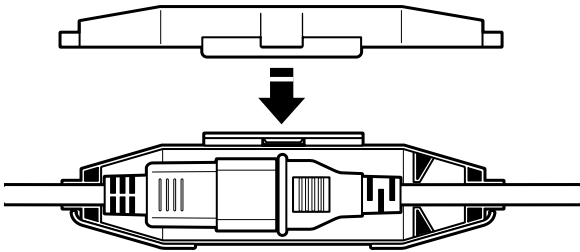
1. Select plug that fits with electric receptacle.



2. Assemble plug into end of the power cord.



3. Secure the power cord by sealing the connection on the cord lock.



4. Place the cord lock cover and push until it snaps.
5. Make sure the power cord connection is seated on the cord lock and that the cord lock clamps correctly.

BASIC OPERATION

USER AND SET UP INSTRUCTIONS



NOTE: After the washer has been installed and plugged in, the display may show “0 MINUTES”. Once the washer has been plugged in and the washer door opened and closed, the display will show the amount required to start the cycle. In washers set for free cycles, the display will flash “SELECT CYCLE”. Otherwise the cycle price will be displayed in dollars and cents unless Price Suppression is chosen in the owner settings.

DEBIT CARD READY: PN model washers are debit card ready. They will accept a variety of debit systems, but do not come with a debit card reader. Refer to the debit card reader manufacturer for proper washer set up. In models converted to a Generation 1 debit card system, a debit pulse represents the equivalent of 1 coin.

1. PD Models: Insert coins until “SELECT CYCLE” flashes in display.
2. PN Models: A debit card is required rather than coins. In Enhanced Debit Mode, the card balance will also display when a debit card is inserted into the reader. When set for free vend, “SELECT CYCLE” will be displayed.
3. Door must be closed before cycle selection is made.
4. Door locks at the beginning of a cycle and remains locked for the entire cycle.
5. Press fabric setting button for the wash cycle desired. After the cycle is started, the time will display and count down.
6. If a cycle is interrupted by opening the door, “RESELECT CYCLE” will flash in the display. To restart the washer, close door, and reselect desired cycle.

⚠ 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.**

IMPORTANT

Electrostatic Discharge (ESD)

Sensitive Electronics

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

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

-OR-

Touch your finger repeatedly to a green earth connection point or unpainted metal in the appliance.

- Before removing the part from its package, touch the antistatic bag to a green earth connection point or unpainted metal in the appliance.
- Avoid touching electronic parts or terminal contacts; handle electronic control assembly by edges only.
- When repackaging failed electronic control assembly in antistatic bag, observe above instructions.

GENERAL USER INFORMATION

**SCROLLING 'OUT OF ORDER' SHOWING IN
DISPLAY, FOLLOWED BY A FAILURE CODE**

This condition indicates the washer is inoperative.

'0 MINUTES' SHOWING IN DISPLAY

This indicates the cycle is complete and the washer cannot be operated. Coins dropped or debit inputs during this condition will be stored in escrow but cannot be used until normal operation is restored by opening and closing the door. If a door switch fails, it must be replaced before normal operation can be restored.

COLD START (Initial first use)

Washer is programmed at the factory as follows:

- 11 minute wash period
- 3 rinses (extra rinse not enabled)
- 7 x coin 1 wash price (PD models)
- Free Vend (PN models)

WARM START (after power failure)

A few seconds after power is restored, if a cycle was in progress at the time of the power failure, 'RESELECT CYCLE' will flash in the display, indicating the need for a button press to restart washer.

DOOR LOCK

Prior to beginning a cycle, there is a door lock routine of lock/unlock/relock; then cycle begins. The door will remain locked until the end of a cycle or approximately 2 minutes after a power interruption.

NOTE: If power is interrupted prior to 2 minutes of operation the automatic door unlocking mechanism may fail, and door will remain locked until the power is restored or the lock is manually opened by pulling down on the door lock manual release tab.

(See page 4-22)

PRICING

After the door is opened following the completion of a cycle, the display indicates the cycle price (unless set for free operation). As coins are dropped or debit inputs arrive, the display will change to lead the user through the initiation of a cycle.

FREE CYCLES

This is established by setting the cycle price to zero. When this happens, 'SELECT CYCLE' will be displayed rather than a cycle price.

DEBIT CARD READY

PN model washers are debit card ready. They will accept a variety of debit card systems, but do NOT come with a debit card reader. Refer to the debit card reader manufacturer for proper washer set up. In models converted to use a Generation 1 debit card system, debit pulses represent the equivalent of one coin (Coin 1).

DISPLAY

After the washer has been installed and plugged in, the display will show '0 MINUTES'. Once the washer has been plugged in and the washer door opened and closed, the display will show the vend price. In washers set for \$0.00 vend, the display will flash 'SELECT CYCLE', but will require a Smart Card to start a cycle if a card reader is installed.



NOTE: Not displayed on washer as shown. Message scrolls followed by the failure code.



CONTROL SET UP PROCEDURES

IMPORTANT: Read all instructions before operating.

PD Models: Insert service access door key, turn, and lift to remove service access door to enter the Set-Up Mode.

NOTE: Prior to operation, a payment system or an OPL kit must be installed.

PN Models: Once the debit card reader is installed (according to the reader manufacturer's instructions), the Set-Up Mode can only be entered by inserting a set-up card (supplied by the reader manufacturer) into the card slot. If a set-up card is not available, Diagnostic Modes can be entered by removing connector AA1 on the User Interface Control.

- Unplug washer or disconnect power.
- Open console, disconnect plug on AA1, close console.
- Plug in washer or reconnect power.

PN washers set up for free vend. Use the Service Access Code Key Dance, X button pattern, to enter Set-Up Mode. Press WHITES, QUICK CYCLE, STOP/PAUSE, BRIGHTS.

The washer is now in the Set-Up Mode. The buttons and the digital display are used to set up the controls. The display can contain 4 numbers and/or letters and a decimal point. These are used to indicate the set-up codes and related code values available for use in programming the washer.

Once the washer has been programmed with a hand held device using Accu Trac or a Gen. 2 card reader is installed, the washer will be in dAS mode permanently, and dAS will be displayed every time Set-Up Mode is accessed.

How to use the buttons to program controls

1. The BRIGHTS – LOWER LEFT button adjusts the value of set-up codes. Pressing this button changes the value by increments. For rapid adjustment, hold the button down.
2. The DELICATES & KNITS – LOWER MIDDLE button advances through the set-up codes. Pressing this button will advance to the next available set-up code. Holding the button down will automatically advance through the set-up codes at a rate of 1 per second.
3. The QUICK CYCLE – LOWER RIGHT button is used to select or deselect options.

FOR PN MODELS: The set-up codes are the same as for the 'PD' models except where noted.

The set-up code is indicated by the one or two left-hand characters. The set-up code value is indicated by the two or three right-hand characters.

NOTE: First code shown in each section is the Factory Default setting.

CODE	EXPLANATION
<u>607</u>	REGULAR CYCLE PRICE
<u>607</u>	Represents the number of coins (coin 1) needed to start the washer; may adjust from 0-39. (See VALUE OF COIN 1.) Advance from 0-39 by pressing the BRIGHTS key pad. Factory default of 7 x coin 1.
<u>600</u>	PN MODELS ONLY: Factory default of 0 coins. With coin slide activation, this represents the number of push-in actuations of a coin slide to start the washer. 6 01 setting would represent one coin slide actuation. NOTE: For coin slide activation, replacement of the meter case is necessary. → Press the DELICATES & KNITS key pad once to advance to next code.

CODE	EXPLANATION
<u>711</u>	WASH LENGTH
<u>711</u>	This is the number of minutes for WASH. Washer comes from the factory preset with 11 minutes. Choose from 9-17 minutes by pressing the BRIGHTS key pad. → Press the DELICATES & KNITS key pad once to advance to next code.
<u>800</u>	ADDITIONAL RINSE OPTION
<u>800</u>	This option is either SELECTED 'ON' or NOT SELECTED 'OFF'.
<u>800</u>	Not Selected 'OFF'.
<u>88r</u>	Selected 'ON'. Cannot be combined with the Super Cycle rinse option. Press the QUICK CYCLE key pad once to change this selection. → Press the DELICATES & KNITS key pad once to advance to next code.
<u>900</u>	CYCLE COUNTER OPTION
<u>900</u>	This option is either SELECTED 'ON' or NOT SELECTED 'OFF'.
<u>900</u>	Not Selected 'OFF'.
<u>900</u>	Selected 'ON' and not able to be deselected. Press the QUICK CYCLE key pad 3 consecutive times to select 'ON'. Once selected 'ON' it cannot be deselected. → Press the DELICATES & KNITS key pad once to advance to next code.
<u>100</u>	MONEY COUNTER OPTION
<u>100</u>	This option is either SELECTED 'ON' or NOT SELECTED 'OFF'.
<u>100</u>	Not Selected 'OFF'.
<u>100</u>	Selected 'ON'. Press the QUICK CYCLE key pad 3 consecutive times to select 'ON' and 3 consecutive times to remove (Not Selected 'OFF'.) Counter resets by going from 'OFF' to 'ON'.
<u>100</u>	Selected 'ON' and not able to be deselected. To select 'ON' and not able to be deselected, first select 'ON', then within two seconds press the QUICK CYCLE key pad twice, the BRIGHTS key pad once, and exit the set-up mode. → Press the DELICATES & KNITS key pad once to advance to next code.
<u>200</u>	SPECIAL PRICING OPTION
<u>200</u>	This option is either SELECTED 'ON' or NOT SELECTED 'OFF'.
<u>200</u>	Not Selected 'OFF', and next available code will be A.00.
<u>25P</u>	Selected 'ON'. Press the QUICK CYCLE key pad once to change this selection.
If SPECIAL PRICING OPTION is selected, there is access to codes '3.XX' through '9.XX'.	
→ Press the DELICATES & KNITS key pad once to advance to next code.	
OPTIONS TO USE IF SPECIAL PRICING IS SELECTED:	
<u>307</u>	SPECIAL CYCLE PRICE
<u>307</u>	Represents the number of coins (coin 1) needed to start the washer; may adjust from 0-39. (See VALUE OF COIN 1.) Advance from 0-39 by pressing the BRIGHTS key pad. Factory default of 7 x coin 1.
<u>300</u>	PN MODELS ONLY: Factory default of 0 coins. → Press the DELICATES & KNITS key pad once to advance to next code.

CODE	EXPLANATION																								
OPTIONS TO USE IF SPECIAL PRICING IS SELECTED (cont.):																									
5.00	TIME-OF-DAY CLOCK, MINUTES																								
5.00	This is the TIME-OF-DAY CLOCK, minute setting; select 0-59 minutes by pressing the BRIGHTS key pad. → Press the DELICATES & KNITS key pad once to advance to next code.																								
6.00	TIME-OF-DAY CLOCK, HOURS																								
6.00	NOTE: Uses the 24 hr. clock. This is the TIME-OF-DAY CLOCK, hour setting; select 0-23 hours by pressing the BRIGHTS key pad. → Press the DELICATES & KNITS key pad once to advance to next code.																								
7.00	SPECIAL PRICE START HOUR																								
7.00	NOTE: Uses the 24 hr. clock. This is the start hour; 0-23 hours. Select START HOUR by pressing the BRIGHTS key pad. → Press the DELICATES & KNITS key pad once to advance to next code.																								
8.00	SPECIAL PRICE STOP HOUR																								
8.00	NOTE: Uses the 24 hr. clock. This is the stop hour; 0-23 hours. Select STOP HOUR by pressing the BRIGHTS key pad. → Press the DELICATES & KNITS key pad once to advance to next code.																								
9.10	SPECIAL PRICE DAY																								
9.10	This represents the day of the week and whether special pricing is selected for that day. A number followed by '0' indicates no selection that particular day (9.10). A number followed by an 'S' indicates selected for that day (9.1S). To change the value of '0' and 'S', use the QUICK CYCLE key pad. Days of the week (1-7) are selected by pressing the BRIGHTS key pad. When exiting set-up code '9', the display must show current day of week: <table><tr><th>DISPLAY</th><th>DAY OF WEEK</th><th>CODE (selected)</th></tr><tr><td>10</td><td>Day 1 = Sunday</td><td>1S</td></tr><tr><td>20</td><td>Day 2 = Monday</td><td>2S</td></tr><tr><td>30</td><td>Day 3 = Tuesday</td><td>3S</td></tr><tr><td>40</td><td>Day 4 = Wednesday</td><td>4S</td></tr><tr><td>50</td><td>Day 5 = Thursday</td><td>5S</td></tr><tr><td>60</td><td>Day 6 = Friday</td><td>6S</td></tr><tr><td>70</td><td>Day 7 = Saturday</td><td>7S</td></tr></table> → Press the DELICATES & KNITS key pad once to advance to next code.	DISPLAY	DAY OF WEEK	CODE (selected)	10	Day 1 = Sunday	1S	20	Day 2 = Monday	2S	30	Day 3 = Tuesday	3S	40	Day 4 = Wednesday	4S	50	Day 5 = Thursday	5S	60	Day 6 = Friday	6S	70	Day 7 = Saturday	7S
DISPLAY	DAY OF WEEK	CODE (selected)																							
10	Day 1 = Sunday	1S																							
20	Day 2 = Monday	2S																							
30	Day 3 = Tuesday	3S																							
40	Day 4 = Wednesday	4S																							
50	Day 5 = Thursday	5S																							
60	Day 6 = Friday	6S																							
70	Day 7 = Saturday	7S																							
9.00	VAULT VIEWING OPTION																								
9.00	This option is either SELECTED 'ON' or NOT SELECTED 'OFF'.																								
9.00	Not Selected 'OFF'.																								
9.5C	Selected 'ON'. Press the QUICK CYCLE key pad once for this selection. When selected, the money and/or cycle counts will be viewable (if counter option(s) is selected) when the coin box is removed. → Press the DELICATES & KNITS key pad once to advance to next code.																								
6.05	VALUE OF COIN 1																								
6.05	This represents the value of coin 1 in the quantity of 5% increments of the larger coin value. 5 x 5% = 25%. By pressing the BRIGHTS key pad, there is the option of 1-199 for the quantity of 5% increments. With coin slide activation, this represents the total vend price. → Press the DELICATES & KNITS key pad once to advance to next code.																								

CODE	EXPLANATION
<u>£.20</u>	VALUE OF COIN 2
<u>£.20</u>	This represents the value of coin 2 in the quantity of 5% increments of the larger coin value. $20 \times 5\% = 100\%$. By pressing the BRIGHTS key pad, there is the option of 1-199 for the quantity of 5% increments.
<u>£.05</u>	PN MODELS: This represents the value of coin 2 in the quantity of 5% increments of the larger coin value. Factory default = 5 x 5% of the larger coin value. → Press the DELICATES & KNITS key pad once to advance to next code.
<u>d.00</u>	COIN SLIDE OPTION This option is either SELECTED 'ON' or NOT SELECTED 'OFF'.
<u>d.00</u>	Not Selected 'OFF'. Used with coin drop or card readers.
<u>d.5S</u>	Selected 'ON'. Press the QUICK CYCLE key pad 3 consecutive times to change this selection. NOTE: This option needs to be set to "00" unless the meter case has been changed to accept a coin slide device. When coin slide mode is selected 'ON', set 'b.' equal to value of vend price. Set set-up code 6 (regular cycle price) and set-up code 3 (special cycle price) to number of slide pushes. If washer is set up as 'CS' and a coin drop is installed, it will not register coins. → Press the DELICATES & KNITS key pad once to advance to next code.
<u>E.00</u>	ADD COINS OPTION This option is either SELECTED 'ON' or NOT SELECTED 'OFF'. This option causes the customer display to show the number of coins (coin 1) to enter, rather than the amount.
<u>E.00</u>	Not Selected 'OFF'.
<u>E.AC</u>	Selected 'ON'. Press the QUICK CYCLE key pad 3 consecutive times to change this selection. → Press the DELICATES & KNITS key pad once to advance to next code.
<u>F.00</u>	ENHANCED PRICING OPTION
<u>F.00</u>	Not Selected 'OFF'.
<u>F.CP</u>	Cycle-Based pricing enabled. This option allows configuration of different prices for cold, warm, and hot water cycles.
<u>F.SU</u>	Super Cycle pricing enabled. This option allows customers to upgrade cycles by depositing extra money. Set-up codes 'H.' and 'h.' will be displayed only when this option is enabled. Press the QUICK CYCLE key pad to change this selection. → Press the DELICATES & KNITS key pad once to advance to next code.
<u>H.01</u>	SUPER CYCLE UPGRADE PRICE (Skipped unless Super Cycle pricing is enabled.)
<u>H.01</u>	This represents the number of coin 1 required to upgrade a base cycle to a super cycle. Advance from 0-39 by pressing the BRIGHTS key pad. → Press the DELICATES & KNITS key pad once to advance to next code.
<u>h.01</u>	SUPER CYCLE TYPE (Skipped unless Super Cycle pricing is enabled.)
<u>h.01</u>	This represents the Super Cycle upgrade option. Press the BRIGHTS key pad to step through upgrade options 1 through 3 as follows: 01 - enhanced wash, extra 3 minutes of wash tumble in addition to the programmed wash time. 02 - extra rinse for all cycles. 03 - both 01 and 02. → Press the DELICATES & KNITS key pad once to advance to next code.

CODE	EXPLANATION
<u>J.Fd</u>	COIN/DEBIT OPTION
<u>J.Fd</u>	Both coin & debit selected. Press the QUICK CYCLE key pad 3 consecutive times to change this selection.
<u>J.F-</u>	Coins selected, debit disabled. Press the QUICK CYCLE key pad 3 consecutive times to change this selection.
<u>J.-d</u>	Debit Card selected, coins disabled. This is the factory default for PN models. Press the QUICK CYCLE key pad 3 consecutive times to change this selection.
<u>J.Ed</u>	Enhanced Debit is self-selected when a Generation 2 card reader is installed in the washer. The Ed option cannot be manually selected or deselected. → Press the DELICATES & KNITS key pad once to advance to next code.
<u>L.00</u>	PRICE SUPPRESSION OPTION This option causes the customer display to show 'ADD' or 'AVAILABLE' rather than the amount of money to add. (Used mainly in debit installations.)
<u>L.00</u>	Not Selected 'OFF'.
<u>L.P5</u>	Selected 'ON'. Press the QUICK CYCLE key pad once to change this selection. → Press the DELICATES & KNITS key pad once to advance to next code.
<u>n.EE</u>	CLEAR ESCROW OPTION When selected, money held in escrow for 30 minutes without further escrow or cycle activity will be cleared.
<u>n.00</u>	Not selected 'OFF'.
<u>n.EE</u>	Selected 'ON'. Press the QUICK CYCLE key pad once to change this selection. → Press the DELICATES & KNITS key pad once to advance to next code.
<u>r.800</u>	TOP SPIN SPEED RPM
<u>r.800</u>	This can be selected from the following spin speeds: 600 rpm, 750 rpm, 800 rpm, 1000 (displays as 999) rpm. Step between speeds by pressing the BRIGHTS key pad. Factory preset for 800 rpm. → Press the DELICATES & KNITS key pad once to advance to next code.
<u>u.00</u>	PENNY INCREMENT OFFSET
<u>u.00</u>	This option is not supported for non-North American models and the value must be set to 00. → Press the DELICATES & KNITS key pad once to advance to next code.
<u>R1.00</u>	PREWASH LENGTH
<u>R1.00</u>	This is the number of minutes of PREWASH. Choose 0 to disable the prewash or select between 2 and 7 minutes by pressing the BRIGHTS key pad. → Press the DELICATES & KNITS key pad once to advance to next code.
<u>R2.03</u>	FINAL SPIN LENGTH
<u>R2.03</u>	This is the number of minutes of final high speed spin. Choose from 3-8 minutes by pressing the BRIGHTS key pad. → Press the DELICATES & KNITS key pad once to advance to next code.

If cycle counter (9 0C) is selected, the following is true:

1 00 Cycles in Hundreds	1 <u>02</u> = 200
2 00 Cycles in Ones	<u>2 25</u> = 25
TOTAL CYCLES = 225	

This is "VIEW ONLY" and cannot be cleared. Press the DELICATES & KNITS button once to advance to the next code.

If money counter (1.0C or 1.C0) is selected, the following is true:

3 00 Amount in Hundreds	3 <u>01</u> = \$ 100.00
4 00 Amount in Ones	4 <u>68</u> = \$ 68.00
5 00 Amount in Hundredths	<u>5 75</u> = \$.75
TOTAL = \$ 168.75	

END OF SET-UP PROCEDURES

EXIT FROM MANUAL SET-UP MODE

■ PD Models: Reinstall service access door.

If preferred, just wait through 2 minutes of inactivity. All settings will be saved and the control exits Set-Up Mode.

■ Card Reader Models: Remove Smart Card

■ PN Models without card reader installed:

✂ Unplug washer or disconnect power.

✂ Open console, reinsert jumper into AA1, close console.

✂ Plug in washer or reconnect power.

■ PN Models with programming switch:

Turn key clockwise and remove.

■ PN Models set up without programming switch:

Set-Up Mode can be exited by using procedures from Service Access Code (Below).

SERVICE ACCESS CODE

This code can be entered to access Service Mode without removing the console. It only functions on washers set up for 0 vend price without any Special Pricing setup, and the Coin/Debit Option must be set to “J_d”. If the washer is not in failure mode, the door must be opened to proceed.

To enter the Service Access Code, press these buttons in the following order:

1-upper left, 2-lower right, 3-upper right, 4-lower left.

NOTE: If the Service Access Code procedure is not completed properly, as noted above, there is a 15 second delay before it can be attempted again.

There are 3 options to exit from Service Mode:

1. Power down the washer, then reapply power.
2. Wait 2 minutes without touching any buttons (without Diagnostic Modes running).
3. From set-up Code 8, press button #1 for 4 seconds.

WASHER HELP MODE

This mode is entered by pressing the BRIGHTS button while in special pricing option mode 2.XX (or while dAS displays if operating with Maytag Data Acquisition setup).

In Help Mode, other display symbols and elements are mapped to reflect the state of various inputs and outputs as follows:

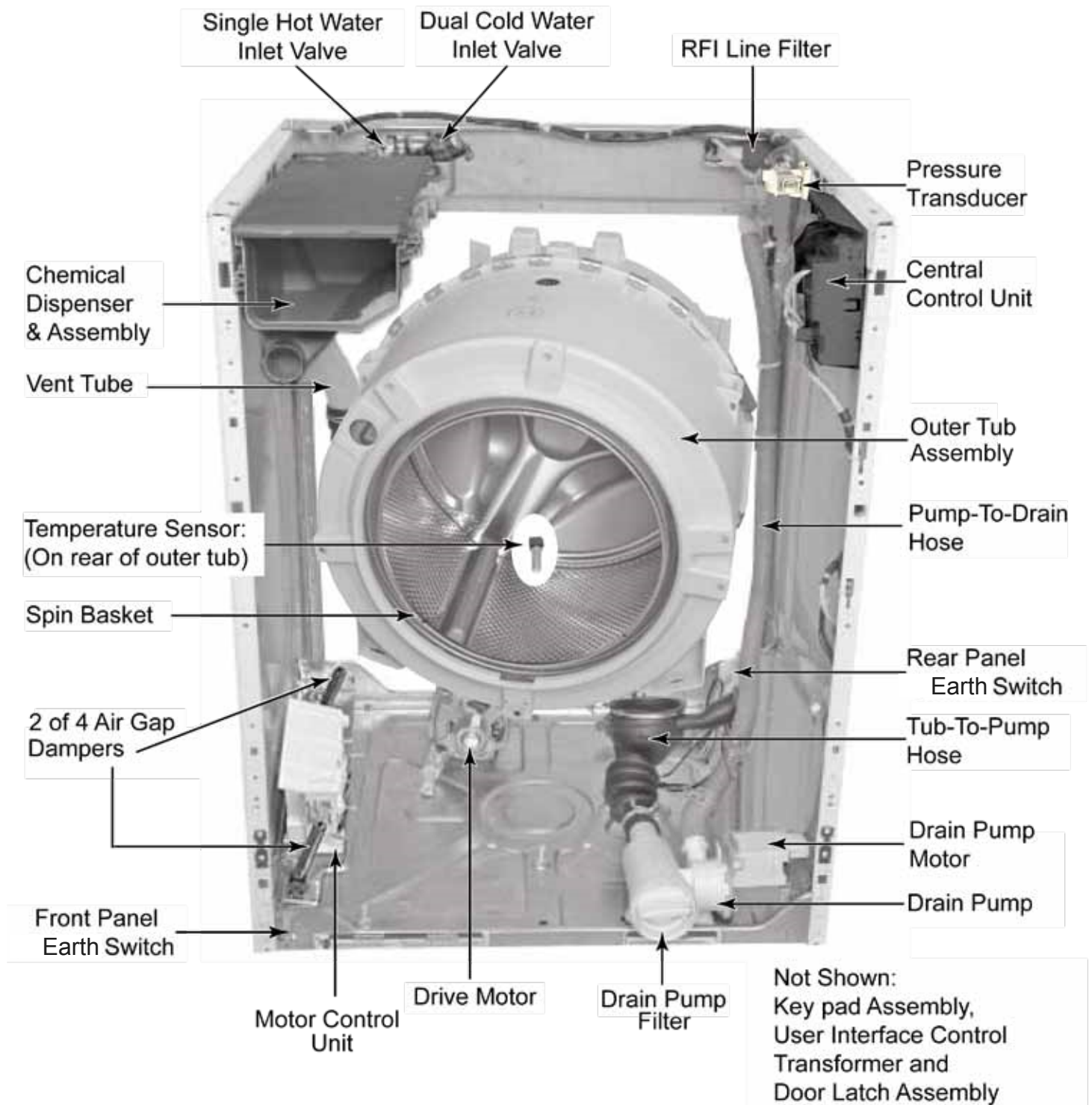
Display Symbol	Description
Wash	Water sensed at wash level.
*	Low voltage present (below about 90 VAC).
° (Circle above digit)	Door closed.
DOOR LOCKED	Door sensed locked.
COLD	Cold water relay on.
HOT	Hot water relay on.
OR	Door unlocked.
AVAILABLE	Drain pump on.

NOTE: A Technical Sheet is taped to inside of lower front panel, which includes fault codes and a washer schematic diagram.

COMPONENT ACCESS

COMPONENT LOCATIONS

This section shows how to service each component within the Maytag Commercial HE Front Loading Washers. The components and their locations are shown below.



CHEMICAL DISPENSER DRAWER AND PARTS

1. To remove the chemical dispenser drawer, pull the drawer out as far as it will go.
2. There are graphics, on the chemical drawer insert, to identify the correct chemical for each compartment.

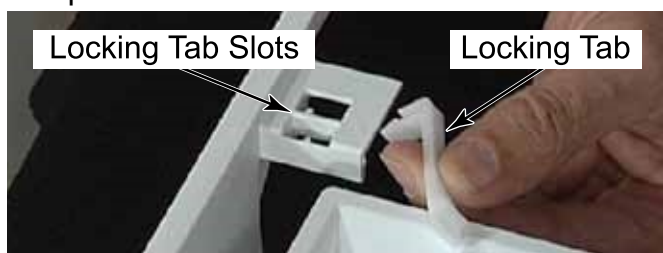


3. Press the release tab down in the top left back corner with a flat blade screwdriver.

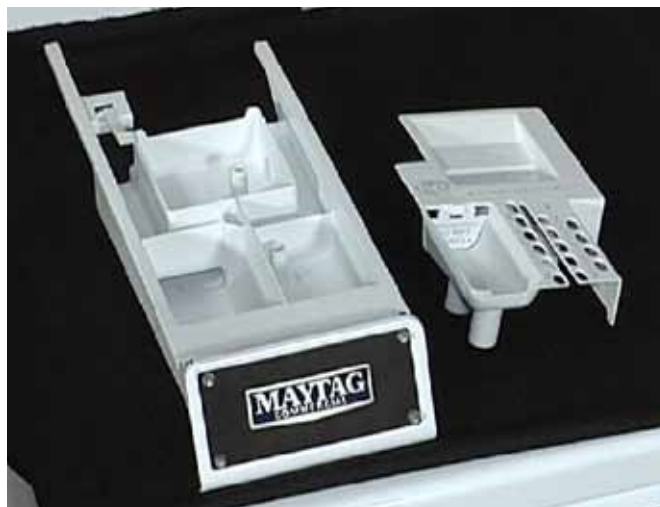


4. Pull the dispenser drawer out of the washer.

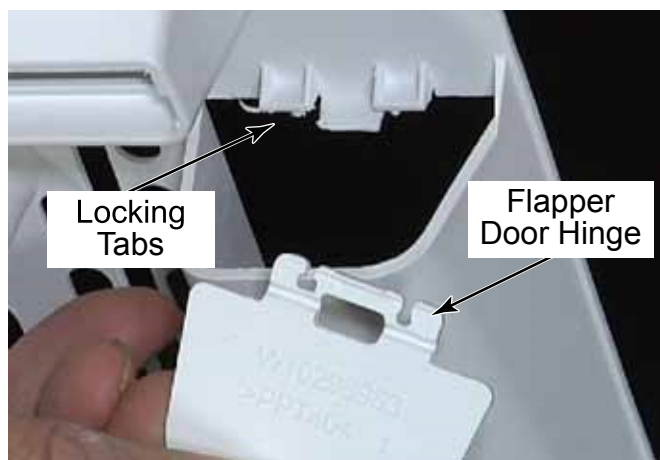
5. To remove the locking tab, unclip it from the slots in the top left back corner of the chemical dispenser drawer. To reinstall it, clip it into the slots.



6. Lift to remove the chemical drawer insert for cleaning. Clean the insert and drawer.



7. The detergent flapper door can be removed and replaced if necessary. Pull the door down from the bottom side of the chemical drawer insert.

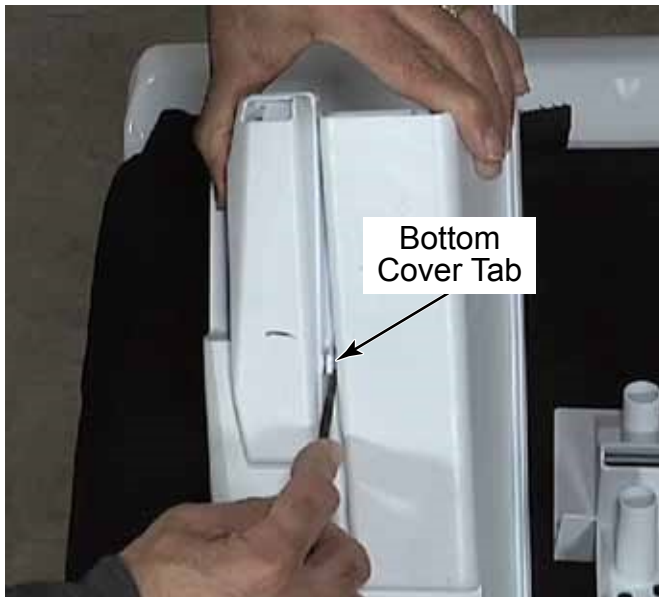


8. Install the flapper door by pushing the hinge of the door into the locking tabs on the chemical drawer insert.

NOTE: There is a front and back side to the flapper door. The embossed writing is read from the front.

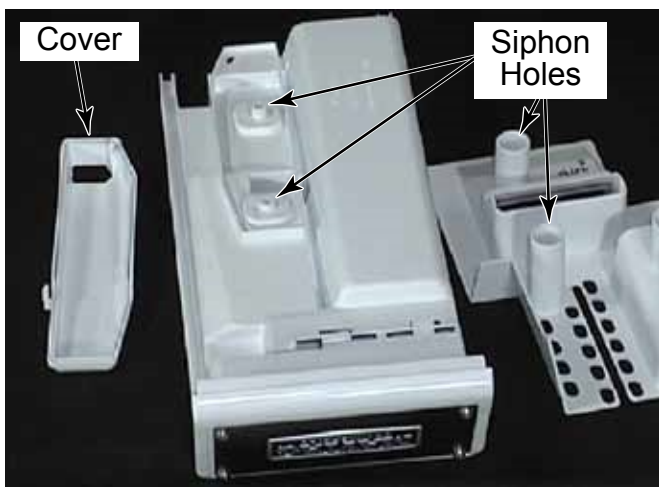
9. To clean the siphon tubes of the chemical dispenser, turn the drawer over.

10. Release the tab on the bottom of the drawer with a flat blade screwdriver.



11. Release the tab at the top back of the drawer and remove the bottom cover.

12. Clean the bottom cover. Clean down the siphon holes in the drawer.

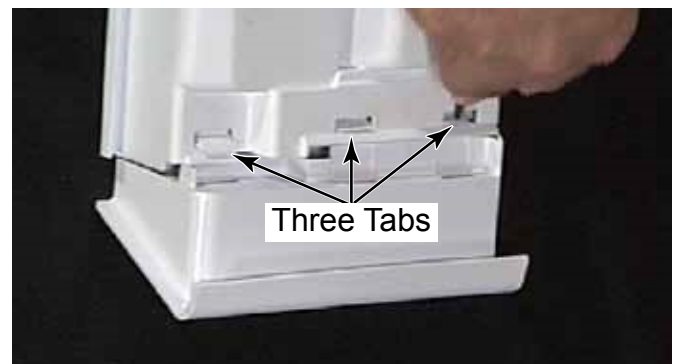


13. To remove the front decorative plate remove 4 T-20 security screws.



TECH TIP: The chemical dispenser drawer decorative front plate is secured with sheet metal screws. The fascia is secured with machine screws. Do not interchange these screws. These screws secure into plastic, without any metal inserts. When reinstalling these screws, do not overtighten them.

14. To remove the handle on the front of the dispenser drawer, turn the drawer over. Release three tabs on the bottom of the drawer with a flat blade screwdriver.



15. Pull the bottom of the handle away from the drawer and slip the top three tabs out of the slots in the drawer.

TECH TIP: To reinstall the handle, straighten the tabs. Hook the top three tabs onto the drawer and rotate the front to engage the three locking tabs at the bottom into the slots of the drawer.

CONTROL PANEL COVER

⚠ 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. Unplug washer or disconnect power.
2. Remove the chemical dispenser drawer.
(See page 4-2)
3. Remove two T-20 security sheet metal screws, from left end of the control panel.



4. Remove four T-20 security machine screws from the front of the facia.

NOTE: When reinstalling the control panel cover, make sure machine screws are used in the facia, and sheet metal screws are used behind the chemical dispenser drawer. If sheet metal screws are used in the facia they will strip out the brass inserts; then either the brass inserts will need to be replaced, or the control panel.



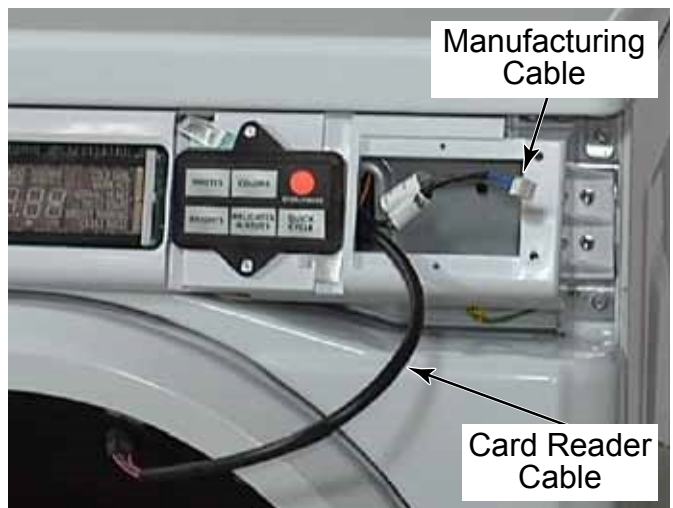
5. Pull the control panel cover away from the front of the washer.



6. There is a wire harness connected to the User Interface Control, which is used in the manufacturing process only. It can be left in the control panel or removed if desired.



7. On PN models there is also a card reader cable connected to the User Interface Control in the control panel area.



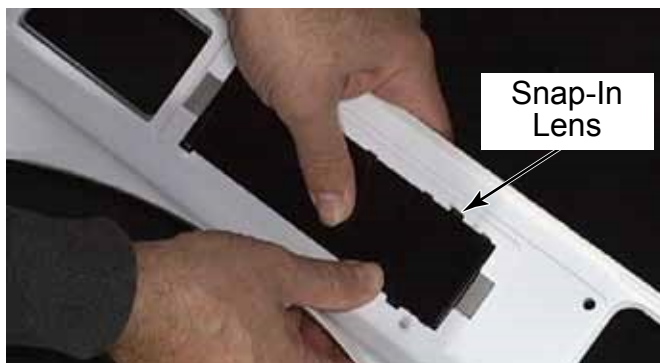
SNAP-IN LENS

⚠ WARNING



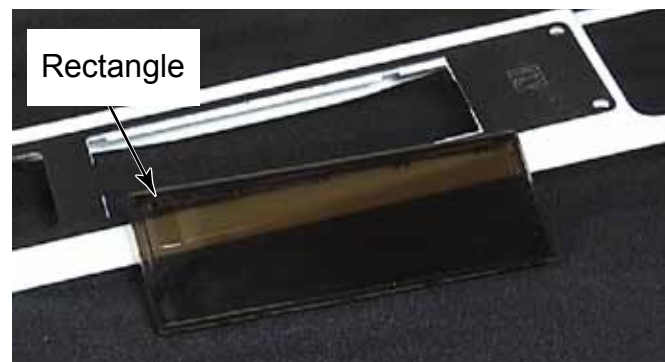
Electrical Shock Hazard
Disconnect power before servicing.
Replace all parts and panels before operating.
Failure to do so can result in death or electrical shock.

1. Unplug washer or disconnect power.
 2. Remove the control panel cover.
(See page 4-4)
- NOTE:** To avoid damage, lay a towel on the washer top and place tools or removed parts on the towel.
3. Release the tabs, from one edge of the snap-in lens, inside the control panel cover.

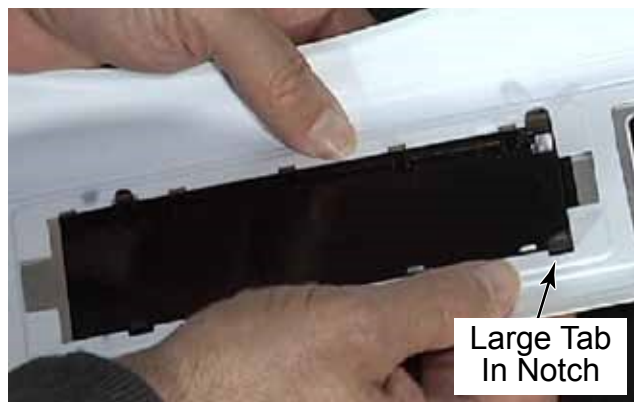


4. Remove the snap-in lens from the front of the control panel cover.

5. When reinstalling the snap-in lens, position the protruding rectangular shape, on the lens, in the upper left hand corner.




6. Insert the large tabs of the lens into the notches in the control panel cover. Snap the lens into position.



TECH TIP: Make sure to clean any finger prints off the lens, especially on the inside of the lens.

FACIA

⚠ 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. Unplug washer or disconnect power.
2. Remove the control panel cover.
(See page 4-4)
3. Remove the snap-in lens. (See page 4-5)
4. Press the back of the facia, away from the control panel cover, to release the double stick tape securing it.

NOTE: Make sure not to bend the facia in the process of removing it. The facia may remove easier by spinning it as the double stick tape is usually only in the center.



5. On PN models, release two large tabs securing the plastic cover installed in the card reader opening.



6. Push the cover out the front of the facia.

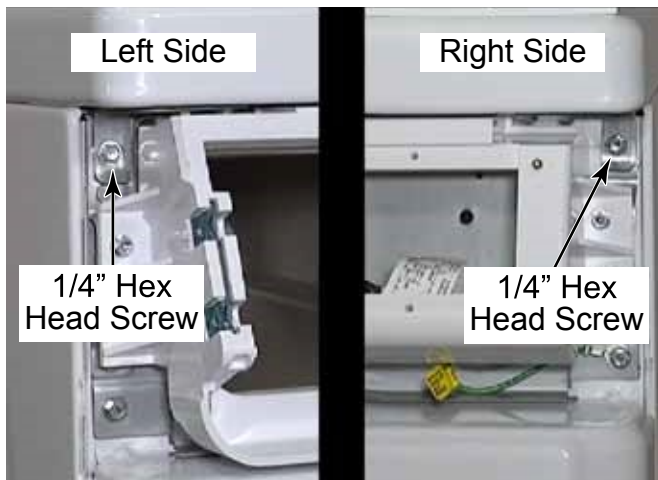
WASHER TOP - OPEN

⚠ 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. Unplug washer or disconnect power.
2. Remove the control panel cover.
(See page 4-4)
3. Remove two 1/4" hex head screws, one in each top front corner, behind the control panel cover.



4. Lift front edge of the washer top to open it.
- When it is open all the way it will rest on the two retaining supports attached to the back of the washer just below the top.

NOTE: If the washer is not level the top may not be stable enough to leave in the upright position without using a support rod. If the retaining supports are damaged or not installed, use a strap to keep the top from opening too far.

NOTE: The top has two hinges, secured with Phillips screws, that are hidden once the top is closed.

NOTE: There are two braces installed, one under and one below the top. The angled brace is glued to the underside of the top. The flat brace is attached to the side panels with two screws and it has three pads stuck to it. When the top is closed the upper angled brace presses in to the glued on foam pads of the lower brace to help reduce vibration of the coin vault.

NOTE: The factory installs braces on the PN model, but they are not needed and can be removed or discarded if they come loose.

Components located under washer top are:

- Cross flow chemical dispenser,
- Single hot water inlet valve
- Dual cold water inlet valves
- RFI line filter
- Power supply cord
- Pressure transducer
- Tub support springs
- Central Control Unit
- Transformer for the UIC
- Upper weight

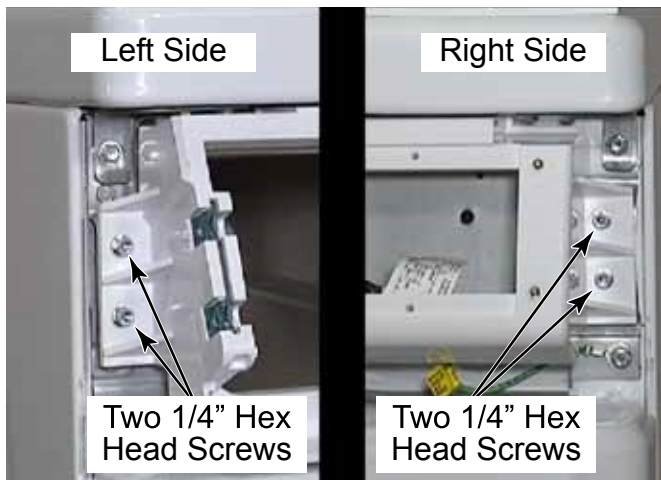
CONTROL PANEL

⚠ 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.

1. Unplug washer or disconnect power.
2. Remove the control panel cover.
(See page 4-4)
3. Open the washer top. (See page 4-7)
4. Remove two T-20 1/4" hex head screws on
each end securing the control panel to the
washer.



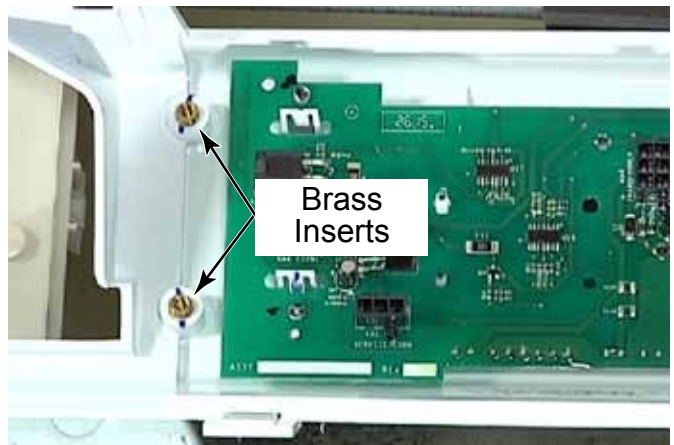
NOTE: These screws are shorter due to
limited space between the control panel and
the frame of the washer.



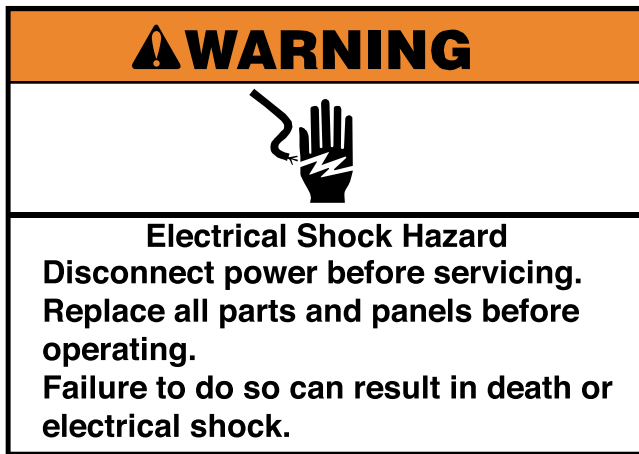
5. Lift control panel up to release the two tabs
from the top edge of the washer and lay it
forward to access User Interface Control.



TECH TIP: The control panel has brass
inserts that can be removed and changed if
they become stripped. The brass inserts are
threaded on the outside and on the inside.
Use a pair of pliers to unscrew the insert
from the control panel.



USER INTERFACE CONTROL (UIC)



1. Unplug washer or disconnect power.
2. Remove the control panel. (See page 4-8)
3. Disconnect all wire connectors from UIC.

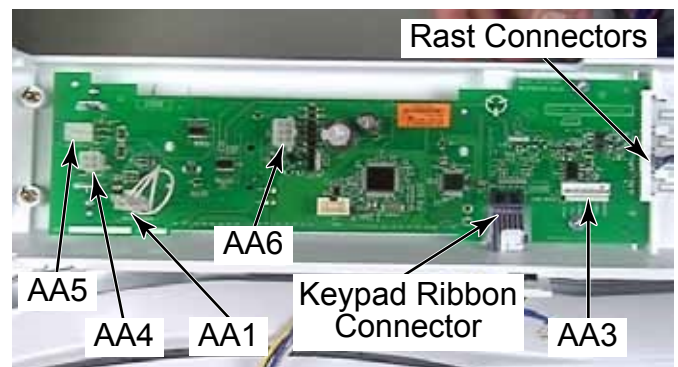
NOTE: Look or dimension of the controls does not necessarily change with incremental improvements to a model, however, labels may or may not indicate the correct software version on the control due to reprogramming in the field of installed controls. Installing a control with incompatible software may cause the washer to not operate, to operate differently, or develop failure codes during subsequent operation of the washer.

4. AA1 is a 4 pin connector to the service and vault switches in the metercase.

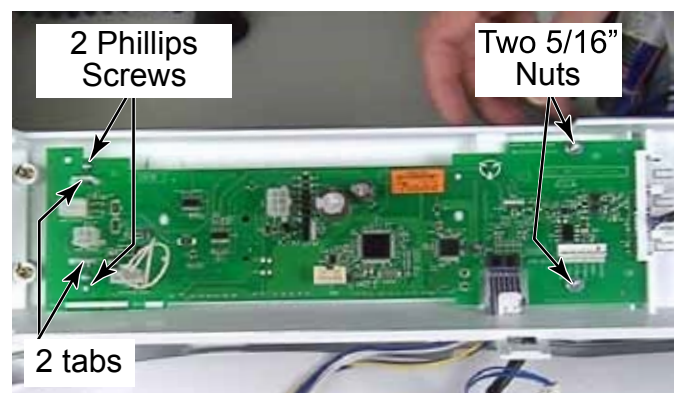
NOTE: If a key to open the service access door on top of the metercase is unavailable, and it is necessary to put washer into service or programming mode, remove connector at AA1. If there is no metercase then remove jumper on the AA1 connector or use the Key Dance to enter the Service Access Mode (See page 3-4) if the washer has been set to zero vend price.

5. AA4 is a 4 pin connector used for Coin 1 of a single or dual coin acceptor. AA5 is a 4 pin connector used for Coin 2 of a dual coin acceptor setup.

6. AA6 is a 4 pin connector from transformer.
7. AA3 is a 6 pin connector for a card reader or another remote controlling device.
8. To remove the keypad assembly ribbon connector, gently pull it out of the connector.
9. Depress locking tab and pull test cable Rast connector off of control board edge at WA3.
10. Depress the locking tab and pull the CCU communication cable Rast connector off of control board edge at WB3.



11. Remove two #1 Phillips screws from the left end and two 5/16" hex nuts from the right end of the UIC.
12. Remove the keypad assembly from the front of the control panel.
13. Squeeze the 2 tabs at the left end of the UIC together and lift the board up off the squeeze tabs. To remove the board, slide it out of the Rast connector mounting bracket.



KEYPAD ASSEMBLY

⚠ WARNING

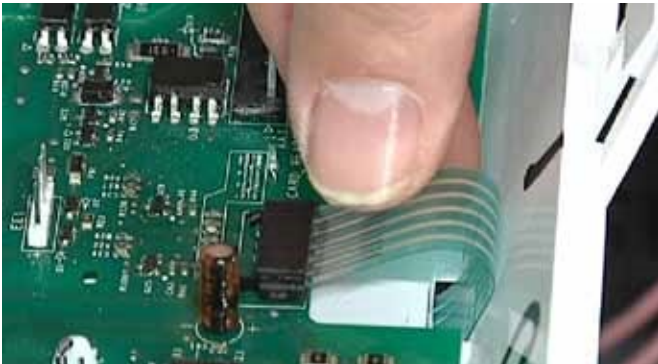


Electrical Shock Hazard
Disconnect power before servicing.
Replace all parts and panels before operating.
Failure to do so can result in death or electrical shock.

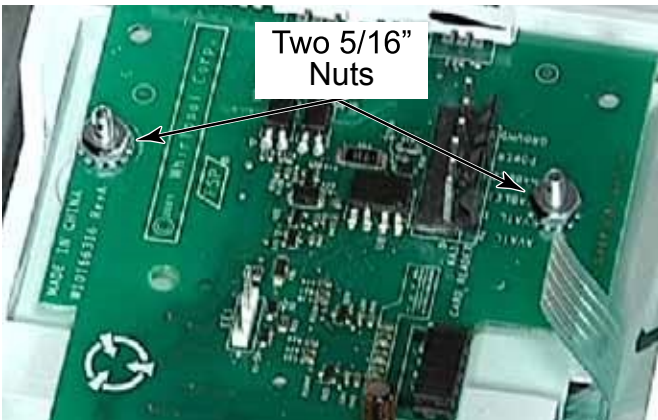
NOTE: It may be necessary to hold your fingers on the heads of these bolts to remove the nuts from the back side.

5. Remove the bolts from the front of the control panel.
6. Push the ribbon connector from the back, through the hole, to the front of the control panel.
7. Remove the keypad and ribbon cable assembly.

1. Unplug washer or disconnect power.
2. Remove the control panel. (See page 4-8)
3. Disconnect the ribbon connector by gently pulling it out of the connector on the UIC.



4. At the right end of the UIC, remove two 5/16" hex nuts. These secure the bolts that hold the keypad to the front of the control panel.



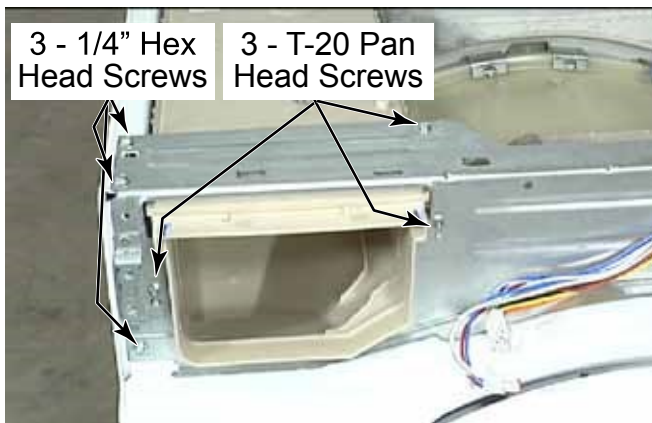
CONTROL PANEL BRACKET

⚠ 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. Unplug washer or disconnect power.
2. Remove the control panel. (See page 4-8)
3. Remove three 1/4" hex head screws at the left end of the bracket.
4. Remove 3 T-20 pan head screws that attach the bracket to the chemical dispenser.

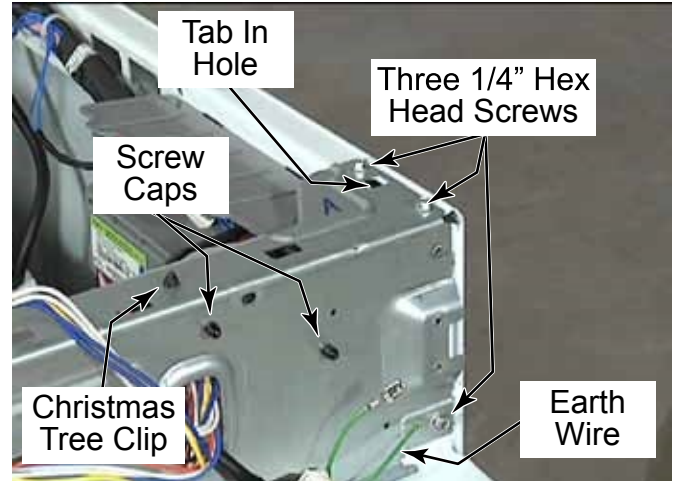


5. Remove the screw caps that are factory installed on the end of the transformer screws. (See photo in right column)

NOTE: Be sure to reinstall these screw caps during reinstallation.

6. Remove three 1/4" hex head screws at the right end of the bracket. The bottom screw on the right end also secures the earth wire for the control panel.

NOTE: Be sure to reinstall this earth wire during reinstallation.



7. The tabs, at the left and right end of the bracket, are inserted into holes in the top of the side panels. These help keep the side panels spread to the proper width.
8. Squeeze the end of the Christmas tree clip on the top right edge and push it through the hole to release wire harness strain relief.
9. Lift bracket to remove tabs from the holes.
10. Roll the bracket up onto its top edge.
11. Squeeze the end of the Christmas tree clip and push it through the hole to release the wire harness strain relief.
12. Pull the wires through the hole in the bracket.

NOTE: If replacing the control panel bracket, remove two 1/4" hex head screws securing the transformer to the bracket.

13. Remove the bracket.

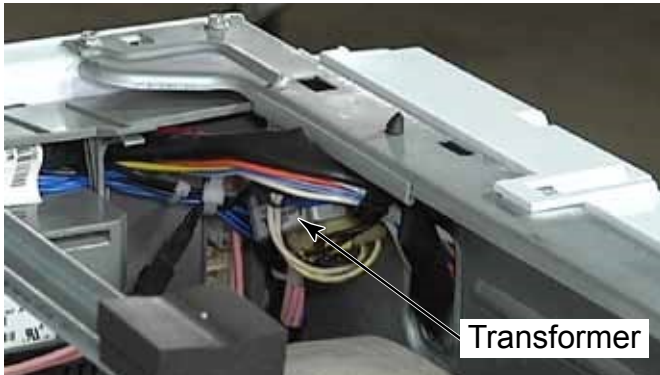
TRANSFORMER

⚠ WARNING



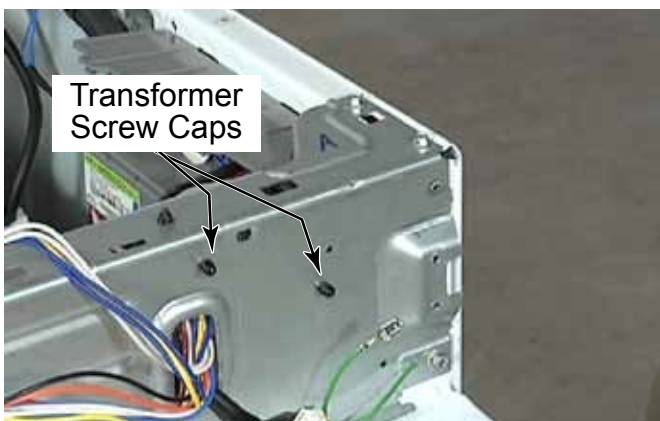
Electrical Shock Hazard
Disconnect power before servicing.
Replace all parts and panels before operating.
Failure to do so can result in death or electrical shock.

1. Unplug washer or disconnect power.
2. The UIC transformer is attached to the control panel bracket, at the right end near the CCU.



3. Remove the screw caps factory installed, from the end of the transformer screws.

NOTE: Be sure to reinstall these screw caps when reinstalling the transformer.

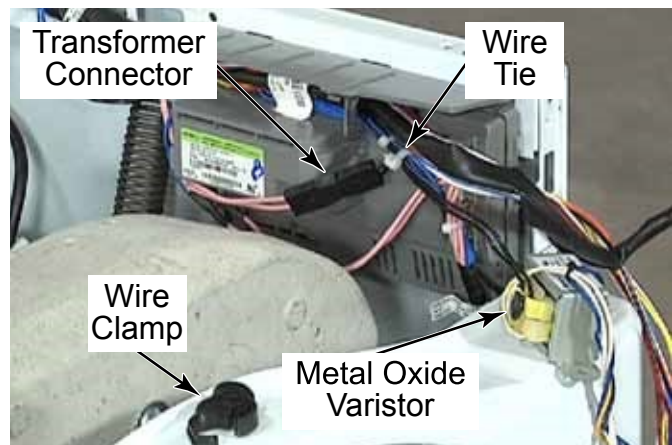


4. Remove two 1/4" hex head screws securing the transformer to the bracket.

NOTE: Photo shown below is with control panel bracket removed for visual clarity.



5. Unsnap and remove the wire clamp holding the transformer wires together with the control board wires.
6. Clip the wire tie securing the transformer wire near the plug.
7. Lift the locking tab and unplug the wire connector to the transformer. The transformer can now be removed.



8. The transformer includes a Metal Oxide Varistor, which is a one time protection for the electronic circuit in case of an overvoltage situation or electrical spike.

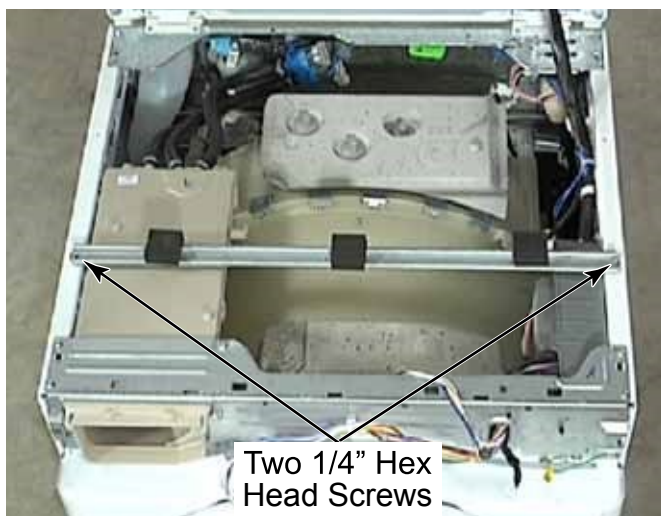
CHEMICAL DISPENSER

⚠ WARNING

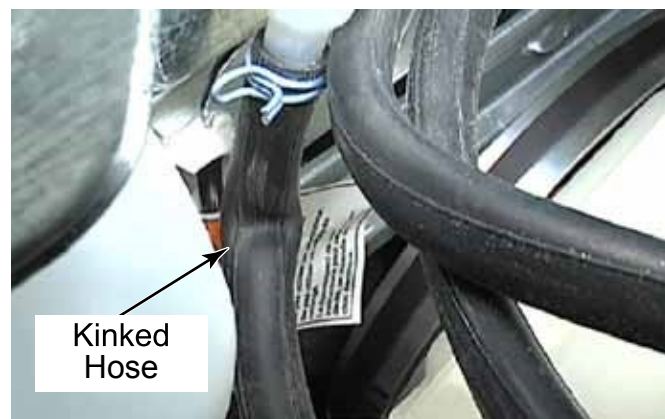


Electrical Shock Hazard
Disconnect power before servicing.
Replace all parts and panels before
operating.
Failure to do so can result in death or
electrical shock.

1. Unplug washer or disconnect power.
2. Turn off the water supply to the washer.
3. Remove the control panel. (See page 4-8)
4. Remove the top brace by removing two 1/4" hex head screws, one from the top of each side panel.



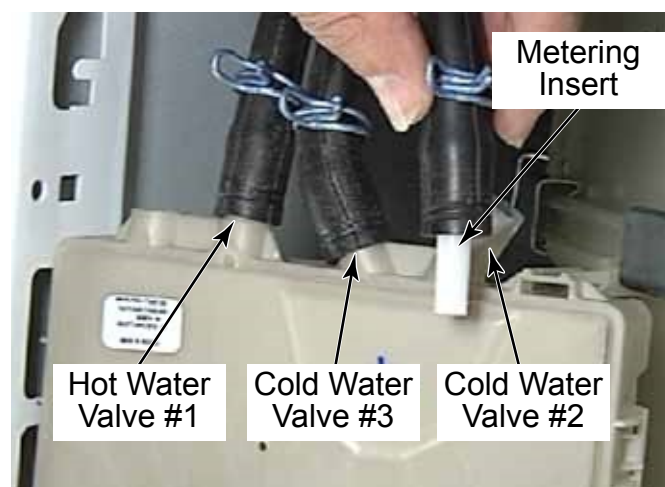
5. Make sure to inspect the hoses coming from the water inlet valves. If a hose is kinked, replace the hose with a longer one to avoid problems during fill.



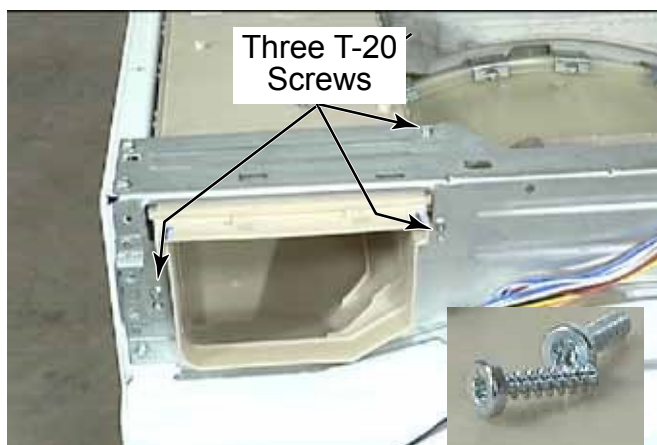
6. Remove the hoses coming from the water inlet valves by moving the clamp down each hose and pulling each one off the back of the chemical dispenser.

NOTE: Make sure the hoses are reinstalled on the same connectors as they are removed from. The hose on the right goes to the upper cold water valve number 2. The middle hose goes to the lower cold water valve number 3. The left hose goes to the hot water valve number 1.

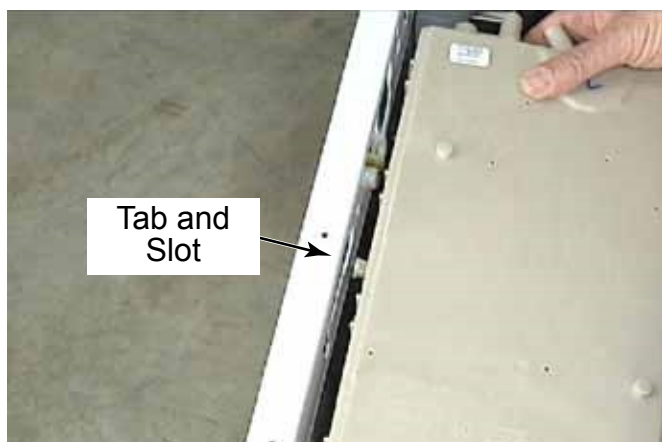
7. There is a water metering insert in the end of each hose. This insert is designed to increase the water pressure of the incoming water. Remove it for cleaning, if necessary, by pulling it out of the end of the hose.



8. Remove three T-20 screws from the control panel bracket securing the front and top of the chemical dispenser. These screws have higher, wider spaced threads that are made for holding tightly to plastic. The head shape of these three screws is also different, a round flat top, for easy identification.



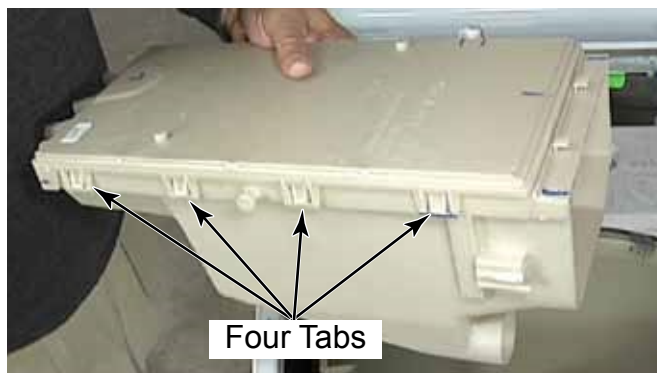
9. Slide the chemical dispenser toward the back of the washer to release the tab securing it to the left side panel.



10. Remove clamp securing dispenser outlet tube to the bottom left front corner of the chemical dispenser and remove dispenser.



11. There are four tabs on each side of the chemical dispenser securing the top of the dispenser to its base. Remove the top to access the water inlet holes in order to clean any mineral or chemical build-up, which could slow the incoming water.



12. Before reinstalling the top of the chemical dispenser, bend the tabs back so they are perpendicular. Snap the top back on the dispenser. Visually inspect; ensuring that each tab is securely snapped in place.



WASHER TOP - REMOVE

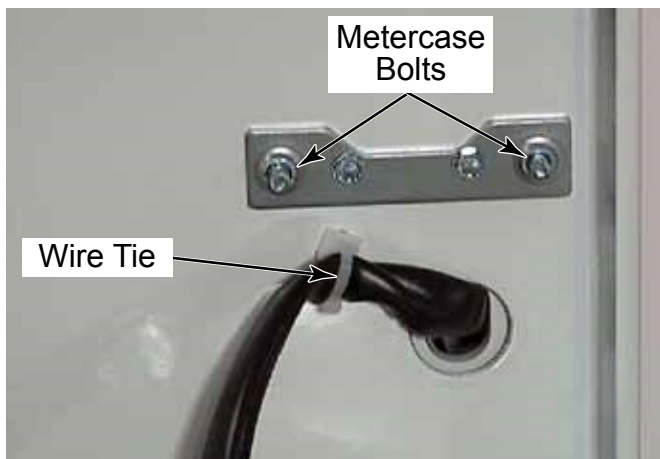
⚠ WARNING



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.

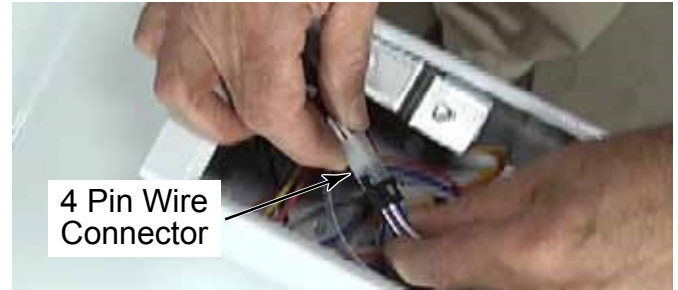
1. Unplug washer or disconnect power.
2. Open the washer top. (See page 4-7)
3. Cut wire tie securing the wires, from the metercase, to the underside of the top.

NOTE: Make sure to cut the wire tie, not the wire tie clip.

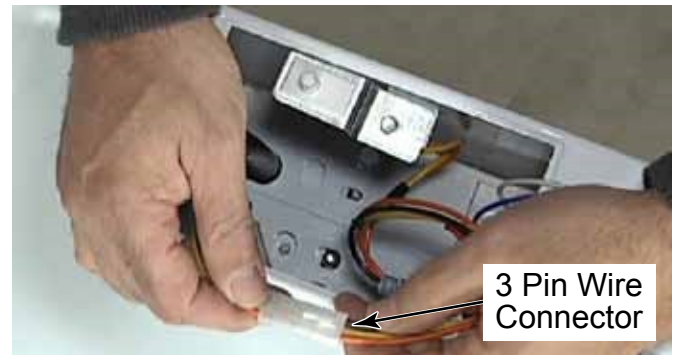


4. Use a service key to unlock and remove the service access door on the back top of the metercase.

5. Press the thumb lock and disconnect the four pin wire connector to the coin drop.



6. Press thumb lock and disconnect 3 pin wire connector to the service and vault switches.



7. Lift the top and pull the wires out of the hole in the washer top.
8. Remove the lower two number 2 Phillips head screws from each hinge attaching the top to the back panel of the washer.



NOTE: Make sure to hold on to the washer top when removing the screws.

9. Lift and remove the top of the washer.

WATER INLET VALVES AND FILTER SCREENS

⚠ WARNING



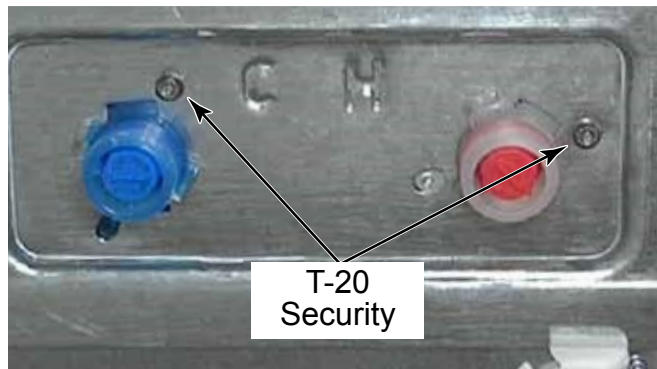
Electrical Shock Hazard
Disconnect power before servicing.
Replace all parts and panels before operating.
Failure to do so can result in death or electrical shock.

1. Unplug washer or disconnect power.
2. Turn off the water supply to the washer.
3. The screens, inside the water inlet valves, should be cleaned periodically. To remove a screen, grip the end with a pair of pliers. Pull screen out with a slight twisting motion.

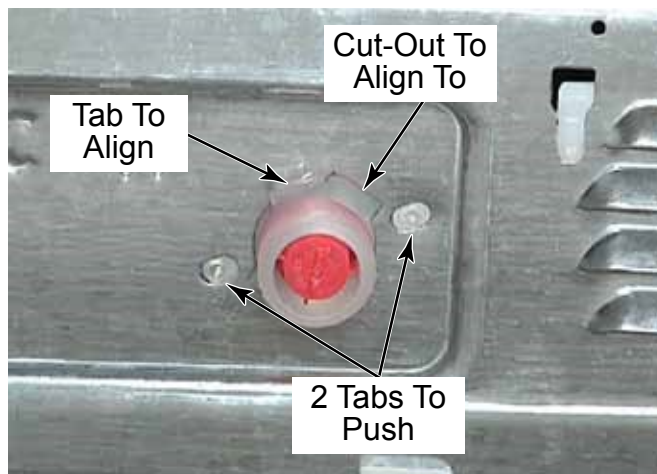


4. Reinstall the screen in the same orientation as when it was removed.
5. Open the washer top. (See page 4-7)

6. To remove a water inlet valve, remove the T-20 security screw, above the valve, on the back of the washer.



7. Push the tabs, on either side of the valve, while twisting the valve from inside the washer.
8. Align the tab, of the valve, with the cut-out in the back panel.

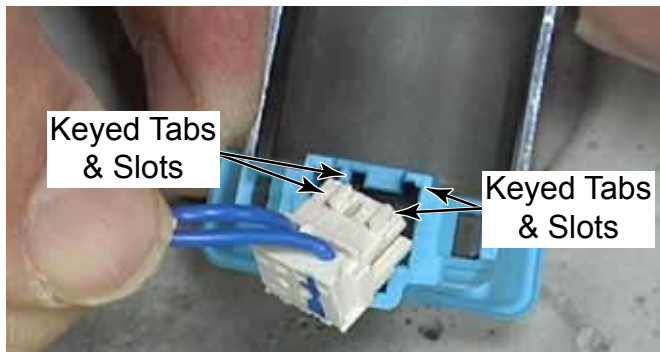


9. Pull valve out of the hole in the back panel.



10. Lift the locking tab and disconnect the rast connector from the water inlet valve.

NOTE: The rast connector is keyed to help with proper reinstallation.



11. Remove the other water inlet valve the same way.

NOTE: It is important that wires only be connected to the proper valves because of how the CCU triggers the valves during the different cycles. Make sure they are marked before removal.

WATER INLET VALVE - REMOVE FROM THE BACK

⚠ 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. Unplug washer or disconnect power.
2. Turn off the water supply to the washer.
3. Remove the back panel. (See page 4-33)
4. Remove the T-20 screw, on the back of the washer, securing each water inlet valve.
5. From inside of the washer, twist the valve body to align the locking tab with the cut-out in the back panel. Pull the valve out of the hole in the panel.
6. Lower the valve to gain access to the hose clamp and Rast connector.
7. Lift the locking tabs and disconnect the wire connectors to the water inlet valves. The blue connector is for the hot water valve number 1, the white connector is for cold water valve number 3 and the grey connector is for Cold water valve number 2.
8. Loosen the clamp and disconnect the hose from each water inlet valve.

NOTE: (See page 4-16) for photos and for how to remove the water inlet valves from the top.

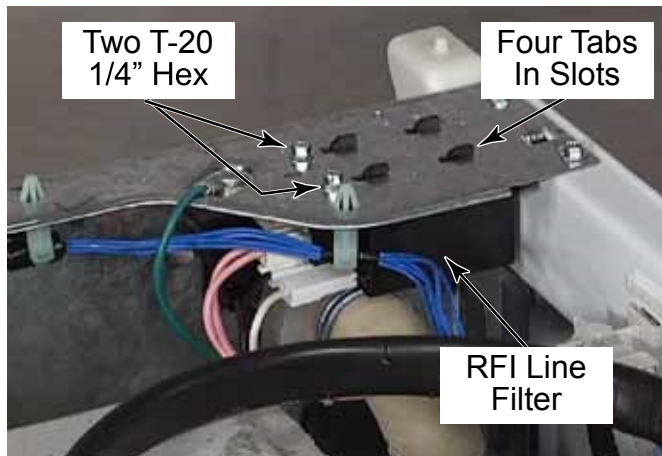
RFI LINE FILTER

⚠ 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.

1. Unplug washer or disconnect power.
2. Open the washer top. (See page 4-7)
3. Remove two T-20 1/4" hex head screws.
4. Slide the RFI line filter to the left to release the tabs in the slots.



NOTE: Power goes in to the filter through the black (hot) wire and white (neutral) wire connectors. Power goes out to the CCU through the pink wires.



5. To disconnect the filter, remove the connector for the pink wires.
6. Pull the black and white wire connectors off their spade terminals.



NOTE: Problems can occur with this washer if the AC Power is connected with reverse polarity. When properly installed the White (neutral) wire connector should be toward the front of the washer as viewed with the filter installed. (See photo in left column)

PRESSURE TRANSDUCER

⚠ 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. Unplug washer or disconnect power.
2. The pressure transducer is located at the top right side near back corner of washer.



3. To remove the pressure transducer, rotate it to access the wire connector.
4. Lift the locking tab and disconnect the rast connector.



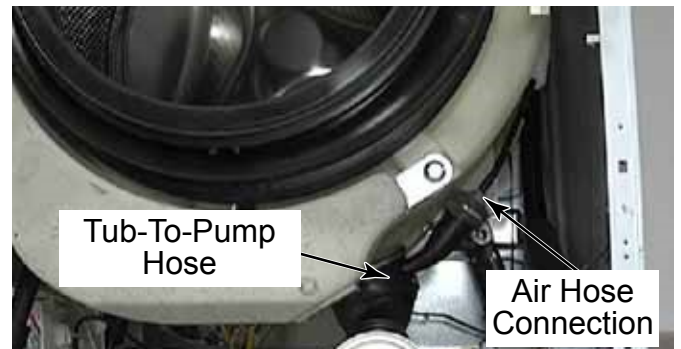
5. Rotate pressure transducer 90 degrees and pull the rectangular tab out of the slot in the washer side panel.



6. Disconnect hose on the bottom of the pressure transducer, there is no clamp, just a pressure fit.



NOTE: Pressure hose should be snug to avoid air leaks. Do not grease this connection to avoid hose disconnection due to vibrations. The air hose connected to the bottom of the pressure transducer goes down the right side of the washer and connects to the tub-to-pump hose, attached at the bottom of the outer tub. The air hose is also attached to a tub clip with a wire tie near the top. If this wire tie is removed for any reason is should be replaced.



CENTRAL CONTROL UNIT - CCU

⚠ 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. Unplug washer or disconnect power.
2. The Central Control Unit, or CCU, is attached to the top right side of washer near the front.

NOTE: Look or dimension of the controls does not necessarily change with incremental improvements to a model, however, labels may or may not indicate the correct software version on the control due to reprogramming in the field of installed controls. Installing a control with incompatible software may cause the washer to not operate, to operate differently, or develop failure codes during subsequent operation of the washer.

3. Use of an earth strap is recommended to avoid damaging sensitive electronic components.
4. Press the locking tab and remove all three wire connectors from the front of the CCU.



5. Use a small flat blade screwdriver to lift the locking tabs securing the top cover of the CCU. Lift the cover to gain access to the wire connectors along the top of the CCU.



6. Lift the locking tabs and remove 6 rast connectors from the top of the CCU. These rast connectors are all keyed different, and marked with color coded marks, to assist in proper reconnection.




7. Lift the locking tabs and remove 4 rast connectors from the back edge of the CCU.
8. Pull CCU away from the side panel, and slide it toward the back of the washer, to release the tabs from the keyhole slots in the side panel of the washer.



9. Remove the CCU.

TOE 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.

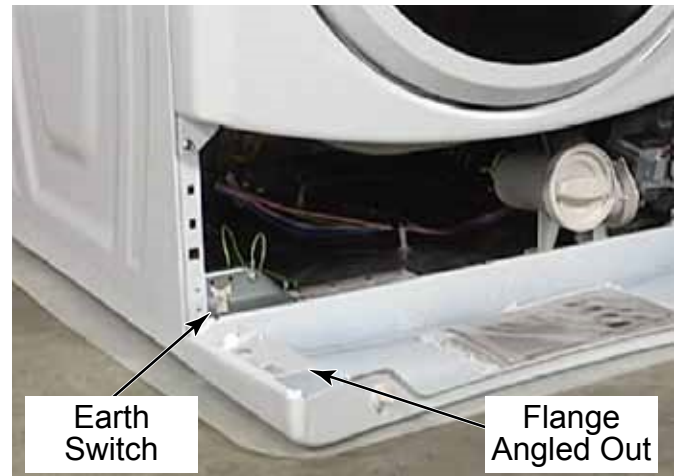
1. Unplug washer or disconnect power.
2. To remove the toe panel, remove three 1/4" hex head screws under the toe panel securing it to the washer base.



3. Slide the toe panel down and out to remove it from the washer.



NOTE: The left flange on the back of the toe panel must be angled out away from the panel. This is necessary to make sure panel engages the earth switch properly. There is an earth switch for the toe panel as well as one for the back panel.



DOOR LOCK / LATCH 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.**

TECH TIP: A tool can be made from a quick ratcheting bar clamp to perform this task. To modify the clamp, remove the stop pin from the end of the bar. Remove the bar. Shorten the bar if necessary by cutting it to the desired length. Reverse the bar in the clamp and reinstall the stop pin. Drill a hole in the top of each clamp pad and install a rivet in each hole. If the rivets are too large for insertion into the loops of the retaining wire spring clamp, grind rivets to fit.

4. Insert rivets into the loops of the spring and pump the clamp to spread the spring clamp.



1. Unplug washer or disconnect power.

2. The door lock/latch assembly is located on the right side of the door opening.



3. Remove retaining wire from groove securing the bellow to the washer front panel.



5. Remove 2 T-20 screws securing door lock assembly to the front panel of the washer.

NOTE: Door lock/latch screws are different than other screws in the washer and need to be reinstalled to remount the lock assembly properly.

6. Push the right side of the bellow into the cabinet opening.



7. Cut the wire tie securing the ferrite core to the front edge of the side panel, near the door lock assembly.



8. Reach in behind the front panel and pull the door lock assembly out.



9. Disconnect 4 wire connectors attached to the lock assembly.

10. When reinstalling the door lock, make sure to install a wire tie on the ferrite core to attach it to the side panel.

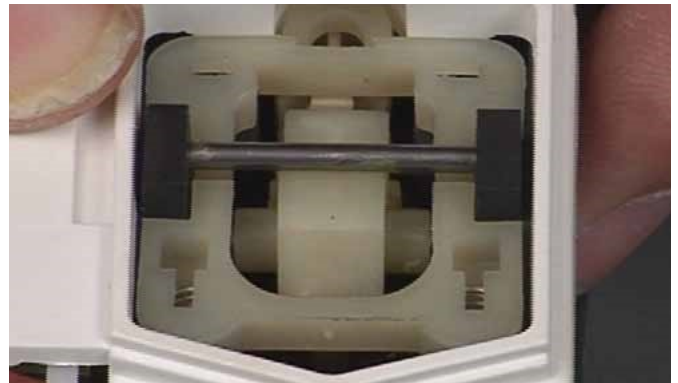
NOTE: In case of a power failure, the lock should unlock automatically after 2 minutes, but if not, the door can be unlocked manually by removing the toe panel and reaching up to pull down on the manual release tab at the bottom of the door lock assembly. A reason for the lock not self-opening after 2 minutes would be if the power interruption occurred prior to 2 minutes of cycle time, which would not allow enough time for the wax motor to energize and extend completely.

TECH TIP: If the latch has been tripped with the door open, by something being poked into the latch, it must be unlatched before the door can be closed again. There are two ways this can be done.

1. Remove the door lock assembly and turn it over to view the back of the latch mechanism.



2. Press the white plastic of the latch while sliding it slightly, to position the metal bar at the back of this white plastic latch mechanism.



3. With the proper tool and knowledge it may not be necessary to remove the latch assembly to reset the tripped mechanism. Using a strong metal hook tool with a 90 degree or more bend at one end, the latch can be pulled from the front to unlatch it. Insert the hook of the tool behind the latch hook and pull forward and down slightly to reset latch hook to the unlatched position.

DOOR HOOK

1. Open the washer door.
2. Remove two T-20 screws securing the hook to the door.



3. Depress the locking tab and rotate the hook down and out of the slots in the door.



REASSEMBLY NOTE: When reinstalling the door hook, do not tighten the hook completely. The hook should remain loose enough to move as it needs to center itself when the door closes. The screws have shoulders to help keep the hook from becoming too tight. Make sure these screws are used when reinstalling or replacing the door hook.

DOOR AND HINGE

1. Open the washer door.
2. Remove two 1/4" hex head screws securing the hinge to the front panel.



3. Lift the door and hinge assembly up and pull the hooks out of the slots in the front panel.



NOTE: This model of front loading washer has a door hinge which allows the door to open a full 180 degrees.

DOOR PARTS AND DISASSEMBLY

1. The door contains the outer lens, the outer trim, the door handle, the inner trim, the glass bowl, the hinge and the door hook. Lay a towel, or another protective covering, on the washer top and place the door, as well as removed hardware and tools, on the protective covering.



2. To disassemble the door remove 8 T-20 screws from inside the door.
3. The 3 screws on the hinge side are not removed unless replacing the hinge.
4. Use a small flat blade screwdriver to release the clips around the edge of the outer door trim to start separating it from the inner door.



5. Finish removing the outer trim by hand.

6. The door handle can now be removed from the slots that are used to locate it on the outer trim.



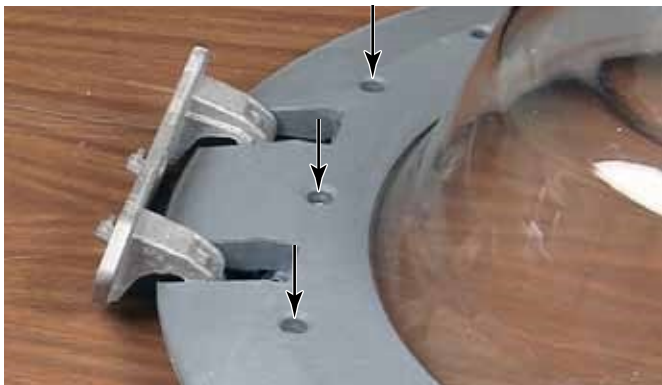
7. The outer door lens can then be lifted off the front of the door assembly.

NOTE: The lens and outer trim can be removed together. The only reason to separate them is if one of the parts needs replacing; the lens, outer trim or door handle.



8. To remove the door hinge, remove 3 T-20 machine screws securing the hinge to the inner door panel. The hinge is also used to hold part of the inner door panel and must be removed to replace the bowl.

NOTE: The door hinge is secured with machine screws, and the door halves are secured with screws for plastic. These screws must not be interchanged.



9. There is a locator pin at the top of the hinge that is inserted into a slot in the inner door panel for proper orientation.



10. To remove the bowl, remove the hinge and remove 3 T-20 screws from each of the other 2 brackets secured to the inner door panel. These screws also have threads for plastic but are shorter than the screws securing the door halves together.

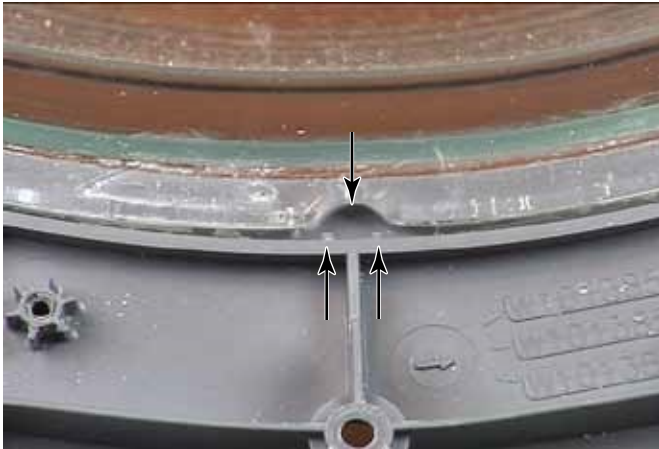


11. Support the inner door trim to avoid having it drop when removing the bowl brackets.



FRONT PANEL

12. When reassembling the bowl and inner door trim position the notch, on the rim of the bowl at the bottom of the door, aligned with the 2 notches on the inner door panel.



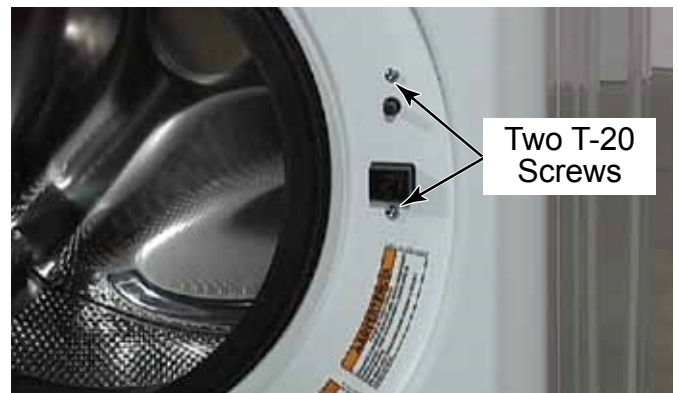
13. There is no gasket or sealing material between the inner door panel and the bowl. The bellow seats and seals against the glass of the bowl which should keep water from reaching this area. This is why the glass bowl needs to be cleaned periodically to avoid build up of hair and debris, which will cause water leakage through the door seal.

⚠ 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. Unplug washer or disconnect power.
2. Open the washer door.
3. Remove the control panel cover.
(See page 4-4)
4. Remove the toe panel. (See page 4-21)
5. Remove two T-20 screws securing the door lock assembly to the front panel.



6. Remove the spring loaded retainer holding the bellow to the washer front.



7. Push the bellow into the cabinet opening.



8. Remove two 1/4" hex head screws, that were hidden by the toe panel, securing the bottom of the front panel to the washer side panels.



9. Remove two 1/4" hex head screws, that were hidden by the control panel cover, securing the top of the front panel to the washer side panels.



NOTE: Support the front panel before removing the last screw.

10. Remove the front panel from the washer.

DRAIN PUMP

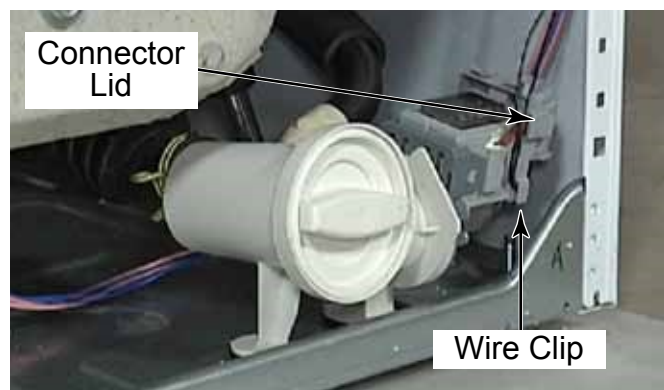
⚠ WARNING



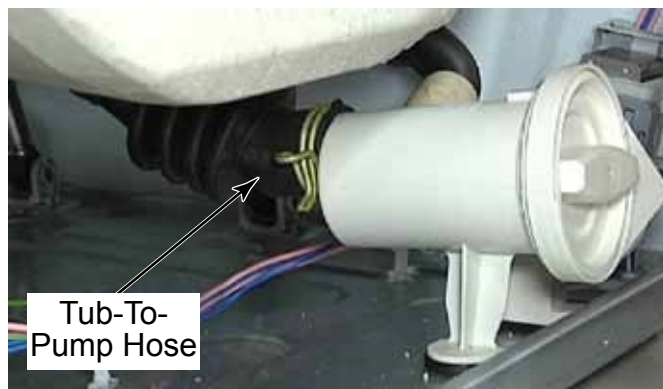
Electrical Shock Hazard
Disconnect power before servicing.
Replace all parts and panels before operating.
Failure to do so can result in death or electrical shock.

1. Unplug washer or disconnect power.
2. Remove the toe panel. (See page 4-21)
3. Place toe panel on the floor, in front of washer, to serve as a catch basin for any water that may be left in the system.

NOTE: Remove tech sheet and wiring diagram from inside toe panel so they do not get wet.
4. Check inside the washer to make sure there is no water before removing the pump filter.
5. Unclip the wires at the lower front right corner of the pump motor.
6. Flip open the lid that covers the wire connector to the pump motor. Pull the wire connector off to disconnect it from the pump. The connector has a thumb tab on the top and keyed tabs on the bottom.



7. Disconnect tub-to-pump hose by squeezing the ears of the clamp and pulling hose off.



8. Use a flat blade screwdriver to lift the right edge of the rubber pad, on the right pump support, out of the hole in the washer base.

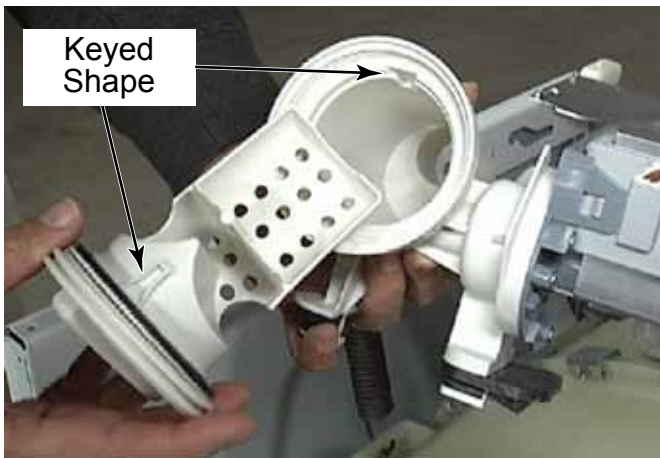


9. Slide the pump to the right and then lift it from the base of the washer.
10. Disconnect the pump-to-drain hose by squeezing the ears of clamp and pulling the hose off. Take note of notch on hose and locating notch on pump that it aligns with.




EARTH SWITCH

11. The pump has a clean out filter, located at the front, for removal of large objects that may have passed from the spin basket. Unscrew pump filter and pull it out of pump.
12. The filter has a large keyed shape, molded into the top, which fits into a corresponding shape in the filter housing helping to align the filter when reinstalled.

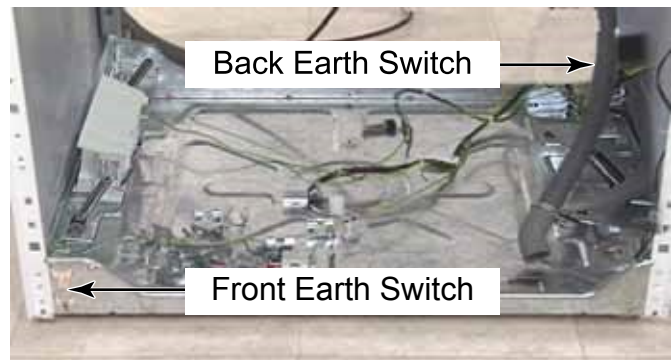


13. The two screws securing the rubber mounting piece to the bottom of the pump support do not need to be removed to remove the pump assembly.



⚠ 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.

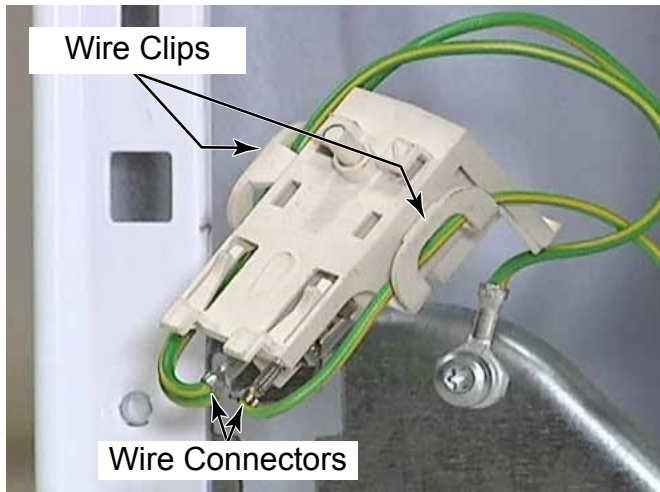
1. Unplug washer or disconnect power.
2. Remove the toe panel. (See page 4-21)
or
Remove the back panel. (See page 4-33)



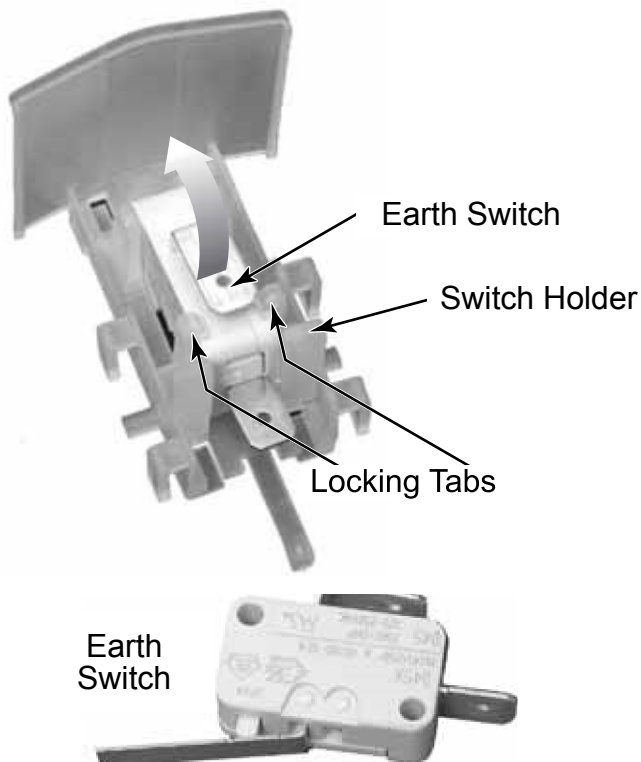
3. Use a flat blade screwdriver to press in on the two locking tabs in the bottom slots to release the switch.



4. Slide the switch up and pull it out of the slots to remove it.
5. Remove the two wires from the clips on each side of the earth switch.
6. Pull the connectors off the spade terminals.

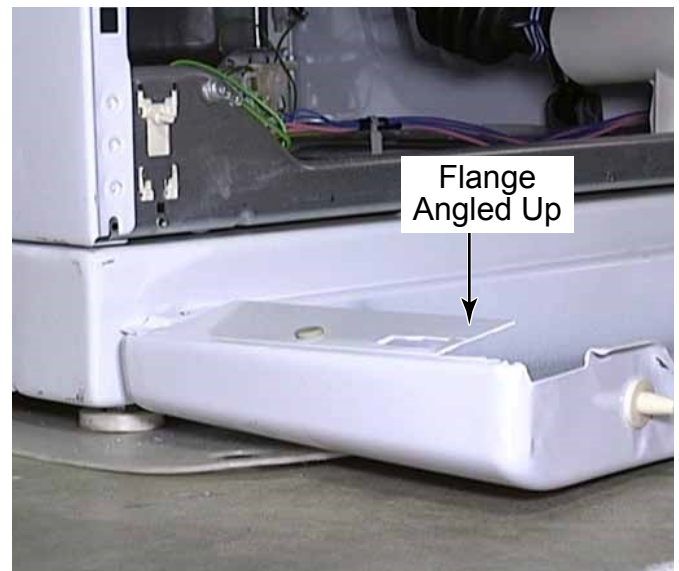


7. Push out on two tabs of the switch holder, rotate switch in the direction of the arrow, and remove the switch from the holder.



NOTE: Loose or bent panels can cause the switches to remain unactivated when the panels are in place, which can cause unexplained Failure Codes.

8. The flange on the left inside edge of the toe panel must be angled away from the front panel so it will engage the button of the earth switch. If the flange is bent flat, or inward, it will not engage the switch button.



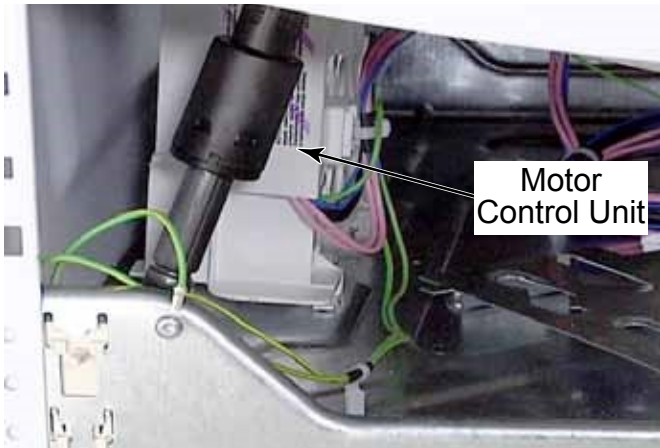
MOTOR CONTROL UNIT (MCU)

⚠ WARNING

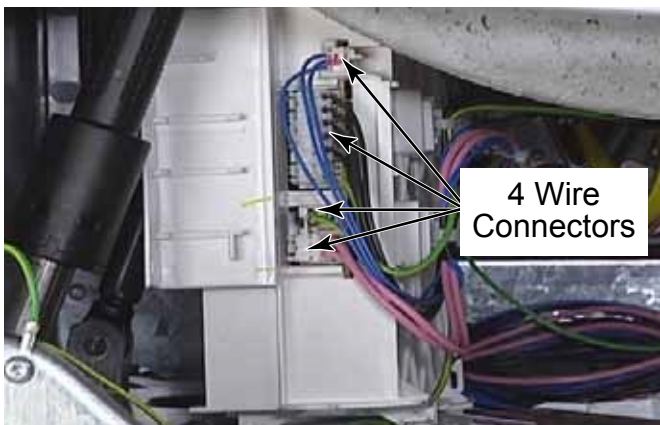


Electrical Shock Hazard
Disconnect power before servicing.
Replace all parts and panels before operating.
Failure to do so can result in death or electrical shock.

1. Unplug washer or disconnect power.
2. Remove the toe panel. (See page 4-21)



3. Disconnect 4 wire connectors from the Motor Control Unit (MCU).



4. Cut the wire ties from the side of the MCU.

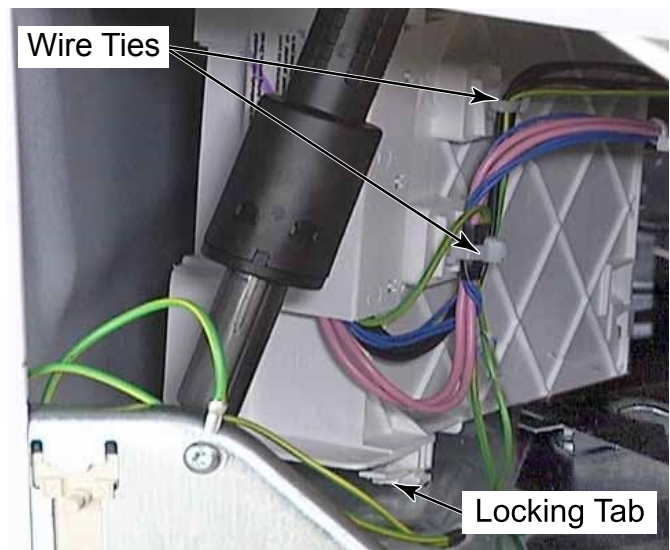
NOTE: Do not cut the stand-offs when cutting the wire ties. The stand-offs are needed to install replacement wire ties.

5. Remove the base clips and install them on the replacement MCU.

NOTE: New wire ties will be provided with a replacement MCU but not new base clips.

6. Use a flat blade screwdriver to lift the locking tab securing the MCU to the base of the washer.

7. Slide MCU backwards to release tabs from the keyhole slots in the washer base.



8. Lift the MCU out of the washer.

NOTE: It is necessary to replace cut, broken or damaged wire ties.

BACK 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.

1. Unplug washer or disconnect power.
2. Remove the hex head screws securing back panel to the washer.



NOTE: The screw in the lower circle of the panel is shorter than the others.



3. Pull the bottom edge out and slide the panel down from under the lip at the top edge, to remove the panel.



4. Components located behind the back panel of the washer are:

- Temperature sensor
- Drive belt
- Motor
- Earth switch
- Basket pulley
- Vent tube
- Vent
- Air gap dampers
- Water inlet valves
- Pressure transducer

DRIVE BELT

⚠ 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. Unplug washer or disconnect power.
2. Remove the back panel of the washer.
(See page 4-33)
3. The drive belt is a ribbed, fiber reinforced belt. The grooves of the belt should ride in the grooves of the motor pulley, not on the front or rear ends of the pulley.

4. To remove the drive belt, turn the basket pulley with one hand and guide the belt off the basket pulley with the other.



NOTE: The back brace has been removed for visual clarity, it does not need to be removed to remove the belt. If the braces are removed for any purpose, do not move the washer or lean on it, or the side panels will be damaged.

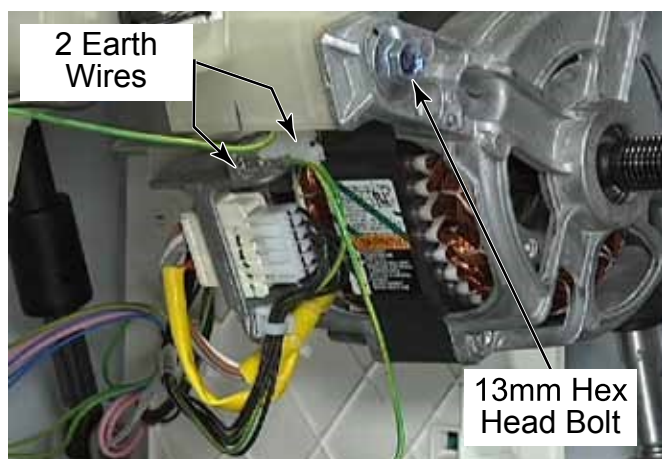
DRIVE MOTOR

⚠ 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.

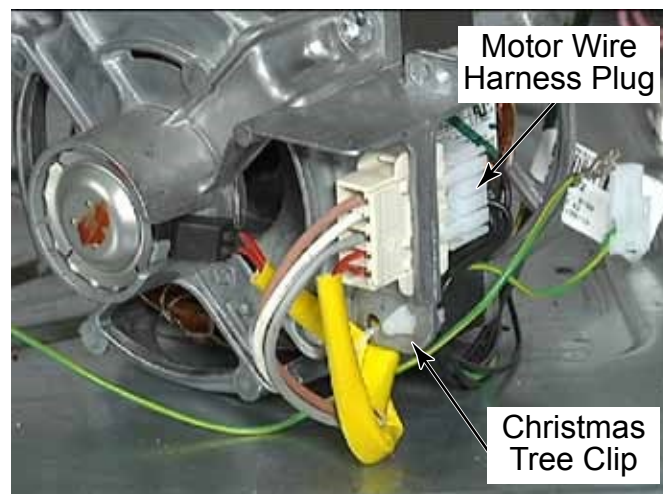
1. Unplug washer or disconnect power.
2. Remove the back panel of the washer.
(See page 4-33)
3. Disconnect the earth wire spade connector by pressing the locking tab and pulling the connector off.
4. Disconnect the second earth wire by pulling it off of the connector.
5. Remove the 13mm (1/2") hex head bolt securing the motor to the outer tub.



6. Rotate the motor down and slide the mounting posts out of the holes of the outer tub by rocking the motor back and forth while pulling backwards.



7. Release the motor wire harness strain relief. Squeeze the back end of the Christmas tree clip and push it through the hole in the motor mounting bracket.
8. Lift the two locking tabs and disconnect the motor wire harness plug.



9. The motor can now be removed from the washer.

NOTE: The drive motor is an asynchronous induction, AC motor.

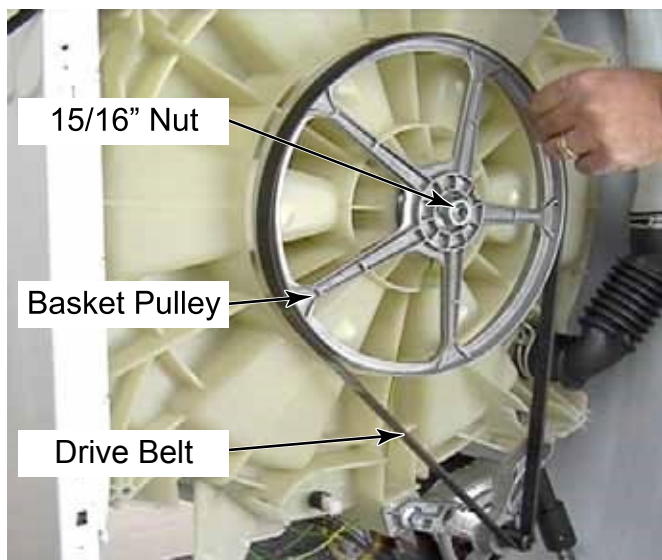
BASKET PULLEY

⚠ 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. Unplug washer or disconnect power.
2. Remove the back panel of the washer.
(See page 4-33)
3. Remove the drive belt. (See page 4-34)



4. Block the pulley to the back of the outer tub to keep the spin basket from moving.




5. Remove the 15/16" hex nut securing the pulley to the spin basket.
6. Pull the pulley off the spin basket shaft.



NOTE: When reinstalling the 15/16" hex nut, make sure to use thread lock and that it is tightened to between 67 - 81 newton meters. If not tightened sufficiently the washer may produce knocking noises that sound like a failed bearing.

TEMPERATURE SENSOR

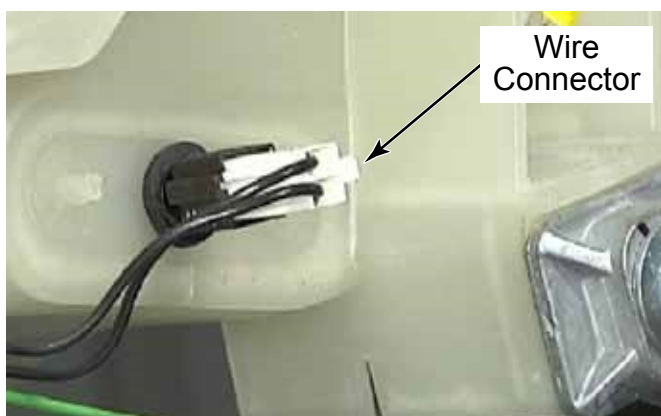
⚠ WARNING

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.

5. Remove and replace the grommet only if necessary.

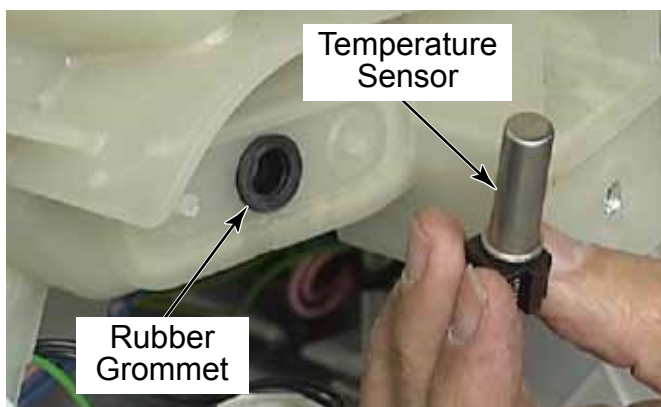
TECH TIP: It is easier to reinstall grommet when separated from the sensor.

TECH TIP: It may help to wet the temperature sensor when reinstalling it since it is a tight fit in the rubber grommet.

1. Unplug washer or disconnect power.
2. Remove the back panel of the washer.
(See page 4-33)
3. Press the locking tab and remove the wire connector from the temperature sensor.



4. Pull the temperature sensor out of the outer tub with a slight twisting motion.



OUTER TUB AND SPIN BASKET ASSEMBLY

⚠ WARNING

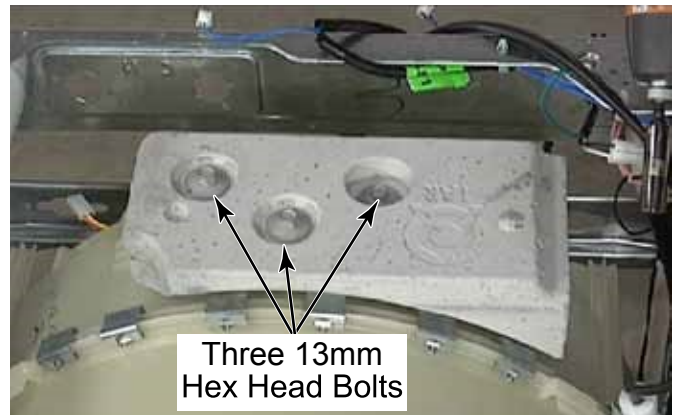


Electrical Shock Hazard
Disconnect power before servicing.
Replace all parts and panels before operating.
Failure to do so can result in death or electrical shock.

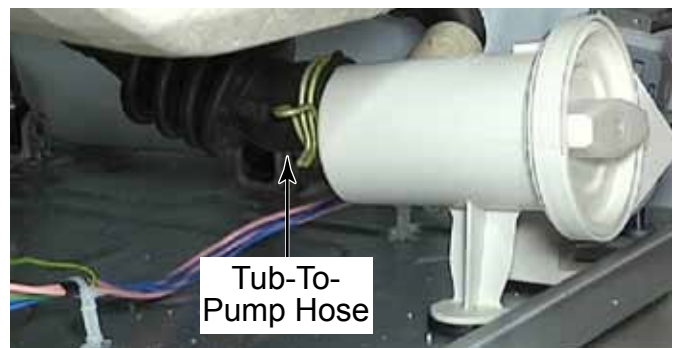
1. Unplug washer or disconnect power.
2. Remove the chemical dispenser assembly. (See page 4-13)
3. Remove the back panel. (See page 4-33)
4. Remove the front panel. (See page 4-27)
5. Remove three 13mm (1/2") hex head bolts securing lower front weight to the outer tub. Support weight when removing the last bolt.
6. Remove three 13mm (1/2") hex head bolts securing upper front weight to the outer tub. Support weight when removing the last bolt.



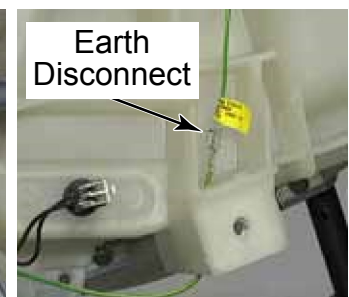
7. Remove three 13mm (1/2") hex head bolts securing the top back weight to the outer tub, and remove the weight.



8. Remove the tub-to-pump hose by removing the clamp securing it to the pump.



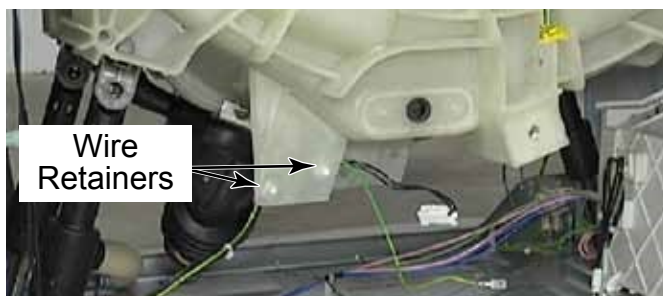
9. Remove the drive belt. (See page 4-34)
10. Remove the drive motor. (See page 4-35)
11. The spin basket hub is earthed. The basket pulley has an indentation for access. Remove the wire at the hub, or follow earth wire from hub, down to disconnect at bottom of outer tub. Push the thumb lock and pull wire apart at the disconnect.



12. Remove the wire connector from the temperature sensor.



13. Remove the two wire retainers by pressing the Christmas tree clips out of the holes in the bottom of the outer tub.



14. Remove the vent tube by squeezing the ears of the clamp and pulling the clamp and tube off the outer tub.



15. Lift the tub assembly to disengage the suspension springs from the side panels.

NOTE: To avoid damage to components in the cabinet base or on the outer tub, do not let tub assembly drop free inside cabinet.

16. Lift the tub assembly straight up to separate the air gap dampers then move it forward out of the cabinet.



17. Fold air gap dampers down to the outer tub to avoid catching them on things.

18. If replacing outer tub, loosen the Phillips screw clamp, located at approximately the 9:00 position, and remove the clamp.



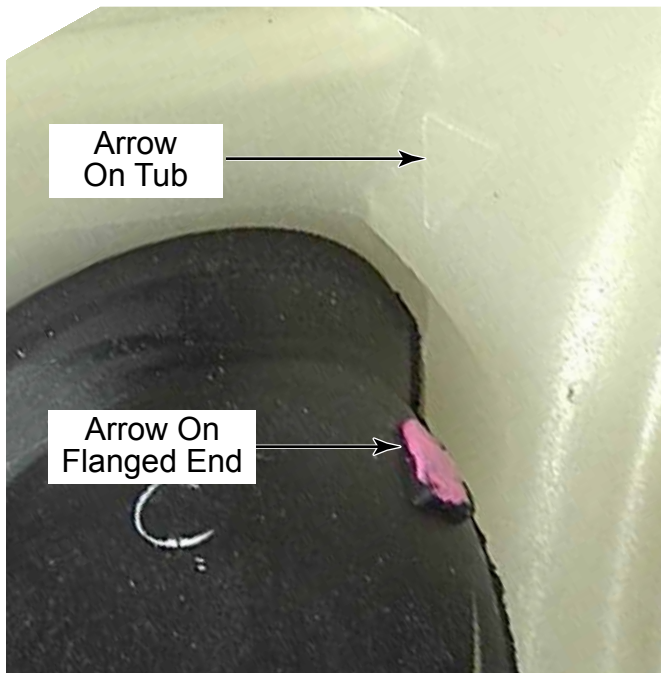
19. Pull bellow away from outer tub opening.

20. Remove six flat nuts securing the front weights to the outer tub by prying them out of their slots with a flat blade screwdriver.

NOTE: To install the flat nuts, insert a nut into each slot and tap them into place.

21. Remove the flanged end of the dispenser outlet tube by working the flange out of the hole in the outer tub.

NOTE: When reassembling the dispenser outlet tube, orient the arrow on the tube toward the arrow on the outer tub.



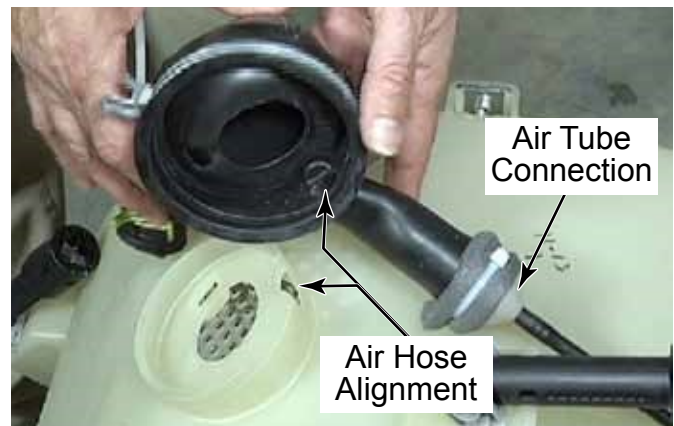
22. When removing the tub-to-pump hose from the outer tub, insert a wire tie around the ears of the clamp as illustrated.



23. Squeeze the ears of the clamp and pull the wire tie tight at the same time. This will keep the clamp spread open as wide as possible for easy removal and reinstallation.

24. Make sure air tube connection is clean of chemical build up. Drain the connector after cleaning it.

25. Align hole for the air hose with the hole on the side of fitting at the bottom of outer tub.



26. Reinstall the hose and clamp. Cut the wire tie when the hose is positioned as required.

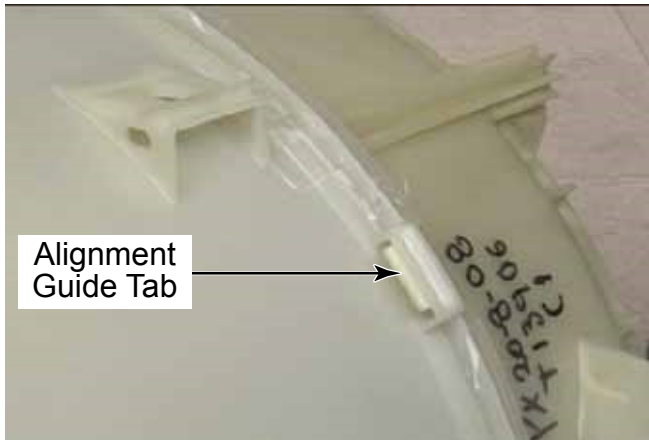
27. The two piece outer tub is held together with a number of metal clamps. Mark the outer tub where the clamp is attached with the pressure hose tied to it.



28. Remove the clamps by prying them off with a flat blade screwdriver.



29. Press the tab on 2 of the 3 guides around the edge of the outer tub to release the tub halves. The 3 guides will assist in aligning the tub halves during reassembly.

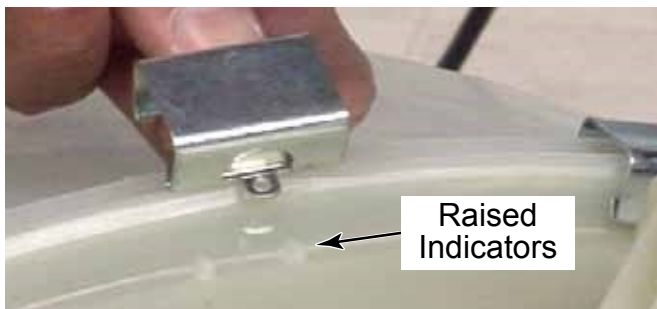


30. Once the halves have been separated, the spin basket can be pulled from back half of the outer tub. The bearing and seal are located in the back tub half.

31. The gasket that seals the two tub halves together should be removed and replaced.



32. When replacing metal clips, place them at each location of two raised indicators.



33. Tap clips onto outer tub with a hammer. There may be more clip locations than there are clips. Use extra clips supplied with the replacement part, or mark areas where clips are missing before removal of the clips.

34. Before reinstalling tub assembly, lay the bottom halves of the air gap dampers down to avoid damage.



35. Reinstall outer tub assembly in the cabinet. Hook tub assembly onto the springs, one at a time, and let it hang.

36. Reinstall the top front weight.

37. Reinstall the bottom front weight.

38. Reinstall the top weight.

39. Tighten all nine 13mm (1/2") hex head weight bolts, securing them to 67 newton meters.

40. Join air gap dampers, one at a time, by positioning ends close to each other. Lift the corner of outer tub to straighten halves of air gap dampers and allow bottom half to slide up into top half. Repeat with other three air gap dampers.



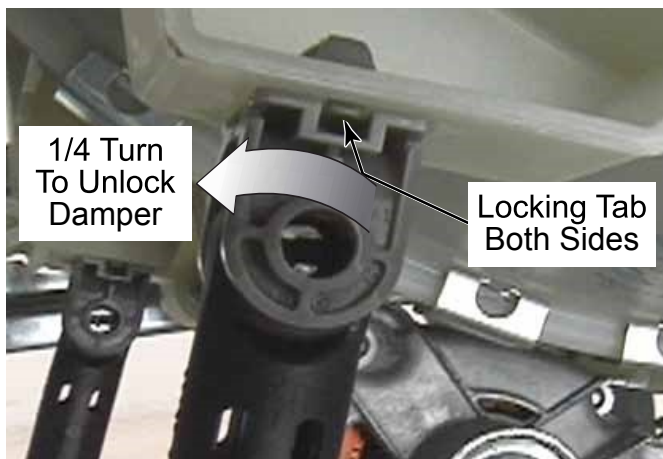
AIR GAP DAMPER

⚠ WARNING

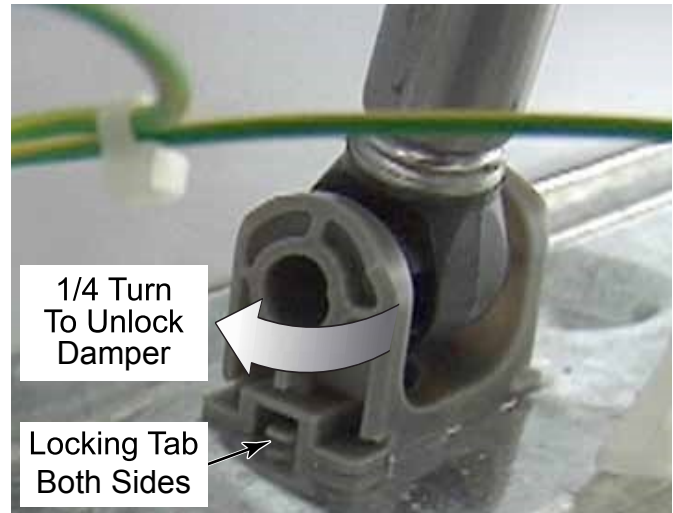


Electrical Shock Hazard
Disconnect power before servicing.
Replace all parts and panels before
operating.
Failure to do so can result in death or
electrical shock.

1. Unplug washer or disconnect power.
2. Remove the toe panel. (See page 4-21)
or
Remove the back panel. (See page 4-33)
3. Use a flat blade screwdriver to release one
of the locking tabs and turn the upper half of
the damper body slightly to hold that locking
tab unlocked.
4. Reach around to the other side and release
the other locking tab.
5. Turn the upper half of the damper body 90
degrees and pull the tab out of the slot in
the outer tub.



6. The damper is attached to the base in the
same way, with 2 locking tabs.



7. To separate the two halves of an air gap
damper, Disconnect either the bottom or the
top of the air gap damper from the washer.
Slide the two halves of the air gap damper
apart to separate them.

NOTE: In the base there is a raised tab that
will keep the damper from rotating in the
wrong direction.

TECH TIP: When removing the outer tub,
the air gap dampers simply separate as the
tub assembly is pulled up out of the washer.

TECH TIP: When removing the back left air
gap damper, use a hammer and a punch to
level the rear most raised tab, on the base
of the washer.



VENT TUBE

⚠ WARNING

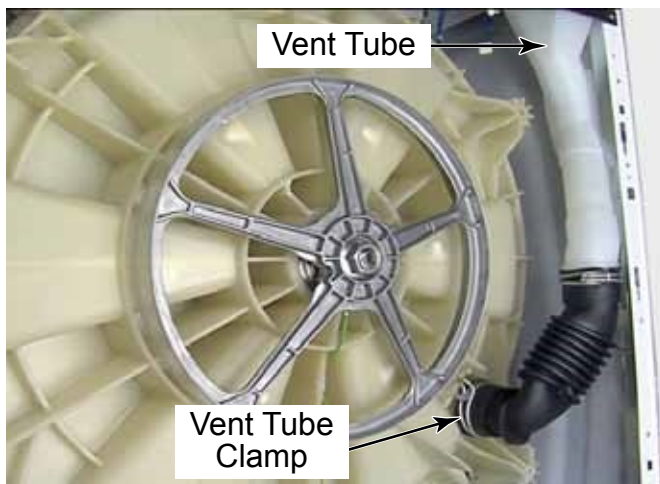


Electrical Shock Hazard
Disconnect power before servicing.
Replace all parts and panels before
operating.
Failure to do so can result in death or
electrical shock.

1. Unplug washer or disconnect power.
2. Remove the back panel. (See page 4-33)

NOTE: The vent tube is attached near the bottom left rear of the outer tub. It allows air to leave the tub and exit out the back of the washer near the inlet valve. There is a one way flapper valve in the vent tube that limits suds escaping through the vent tube.

3. Remove the clamp securing the vent tube to the back of the outer tub and remove tube.



MAIN TOP SUPPORT

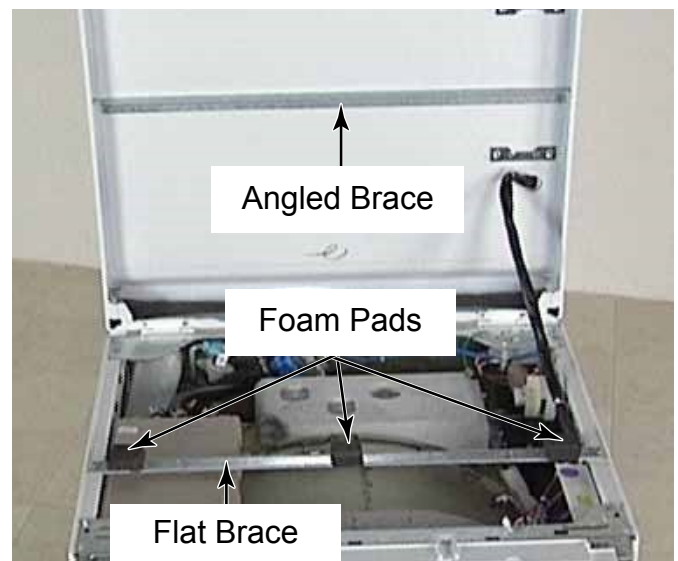
⚠ WARNING



Electrical Shock Hazard
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operating.
Failure to do so can result in death or
electrical shock.

1. Unplug washer or disconnect power.
2. Turn off the water supply to the washer.
3. Open the washer top. (See page 4-7)

NOTE: There are two parts that make up the top support. The angled brace is glued to the underside of the top. The flat brace is attached to the side panels with a 1/4" hex screw at each end and it has 3 foam pads stuck to it. When the top is closed, the upper angled brace presses in to the glued on foam pads of the lower brace to help reduce vibration of the coin vault. The factory installs the braces on the non-coin model, but they are not needed and can be removed or discarded if they come loose.



BELLOW

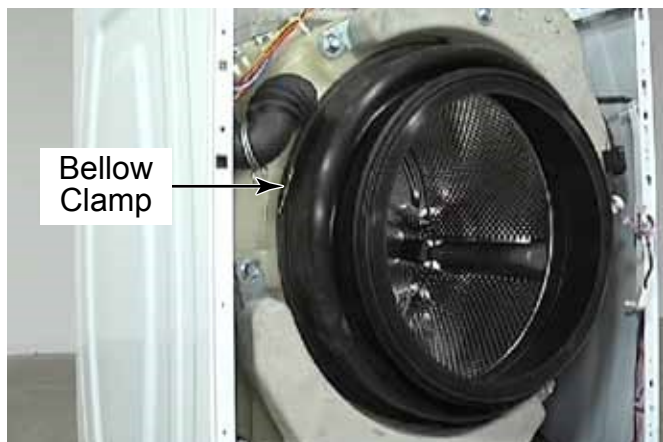
⚠ WARNING



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. Unplug washer or disconnect power.
2. Remove the front panel. (See page 4-27)
3. Loosen the Phillips screw on the clamp securing the back of the bellow to outer tub.

NOTE: The clamp is located at approximately 9:00 position on outer tub.

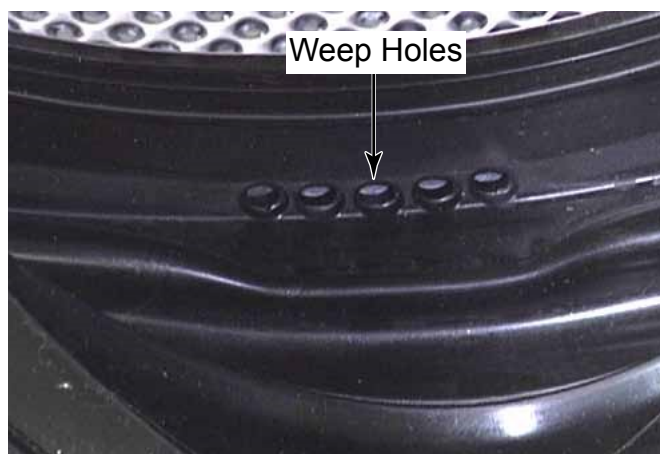


4. Remove the bellow retaining clamp from around the bellow.

5. Pull the bellow off the flange and out of the outer tub to remove it.



NOTE: When reinstalling the bellow, it is important to position the weep holes at the bottom center of the cabinet opening.



NOTE: Removal of the front weights will make it much easier to reinstall the bellow.

NOTE: If reinstalling the tub assembly into the washer, reinstalling the bellow on the outer tub is done before reinstalling the front weights.

NOTE: The tab at the top of the bellow is to help bump clothes away from the bellow as they are turning in the washer.

BAFFLE

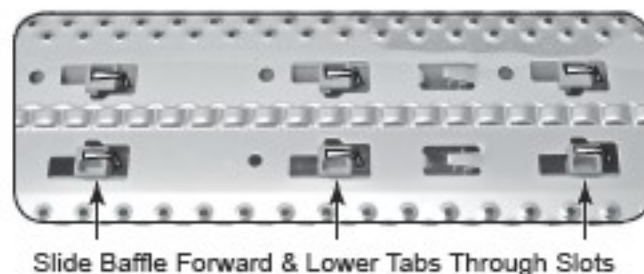
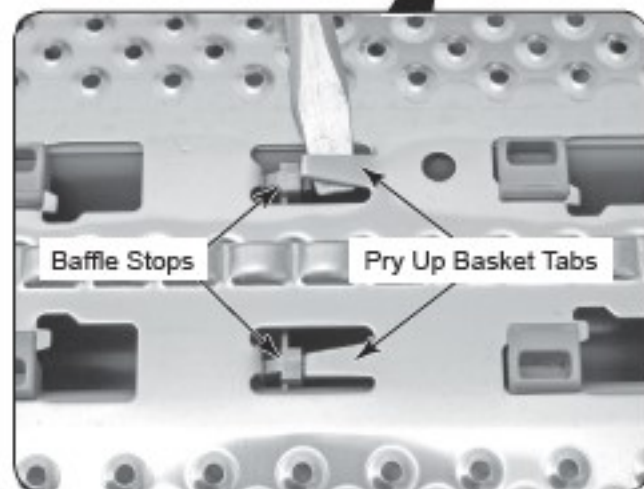
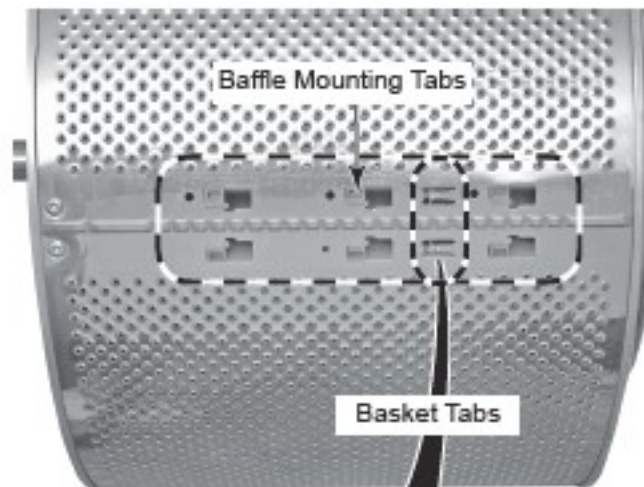
⚠ WARNING



Electrical Shock Hazard
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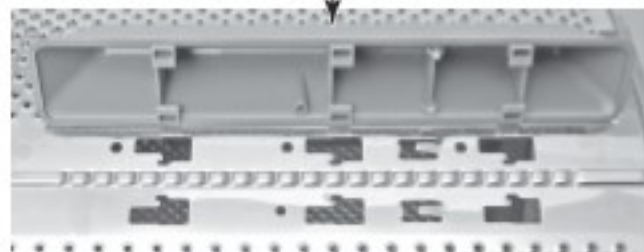
1. Unplug washer or disconnect power.
2. Turn off the water supply to the washer.
3. Remove the outer tub and spin basket assembly. (See page 4-38)
4. Pry 2 metal tabs up with a flat blade screwdriver.
5. Slide the baffle to release the tabs from the slots in the spin basket and remove it from the spin basket.

NOTE: It is not necessary to remove the spin basket from the outer tub when replacing a broken baffle. Just break off the broken baffle and remove all of the broken parts. Make sure the pry tabs are lowered toward the inside of the spin basket. Slide the new baffle into the slots in the spin basket and slide the baffle until it locks into place behind the pry tabs.




Slide Baffle Forward & Lower Tabs Through Slots

Baffle Removed



METERCASE - REMOVE

⚠ 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. Unplug washer or disconnect power.
2. Remove the coin vault.
3. Remove two 13mm (1/2") hex head bolts below the coin box in the front of the coin vault area.



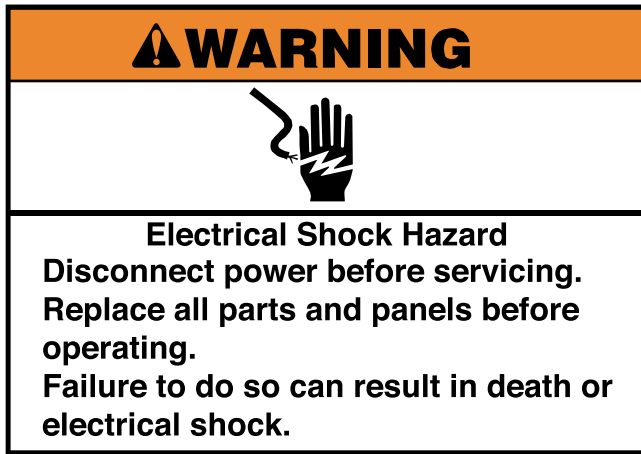
4. Remove the service access door on the back top of the metercase.
5. Remove two 13mm (1/2") hex head bolts from inside the service access area at the base of the metercase.



6. Remove the metercase from the washer and the pad that is between the metercase and the washer top.

NOTE: When reinstalling the metercase mounting bolts, make sure the bolts are tightened securely to avoid excess noise and vibration. Torque Specification is 16-20 newton meters.

SERVICE SWITCH



4. Remove the switch, bracket and wire harness.

NOTE: It is quite easy to incorrectly install the Service and Vault Switch wire harness. Mark the wires for the switch that they go to prior to disassembly. This will make it much easier to remember the correct orientation and avoid a miswired issue.

1. Unplug washer or disconnect power.
2. Remove the service access door on the back top of the metercase.
3. Remove one 5/16" hex head screw to release bracket holding the service switch.



COIN DROP

⚠ 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. Unplug washer or disconnect power.
2. Remove the service access door on the back top of the metercase.
3. Remove 2 security bolts, securing the coin drop, from inside the service access area using a 1/4" socket and a ratchet.



4. Disconnect the wire harness connectors of the coin sensor.




5. Pull the coin drop out from the front of the metercase.



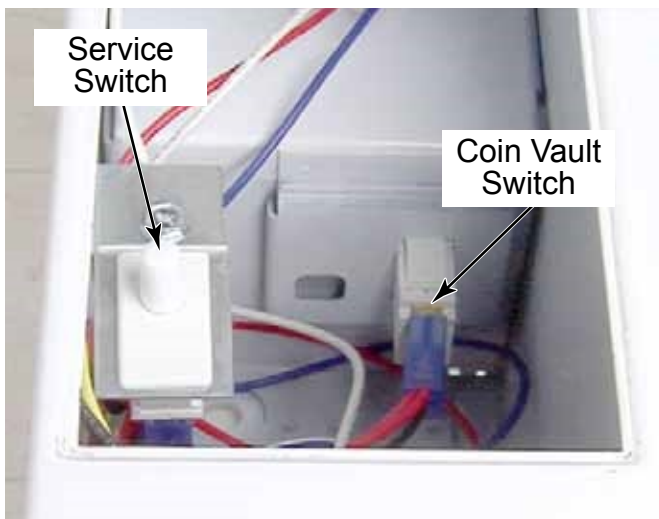
NOTE: When reinstalling the coin drop make sure the wires connected to the coin sensor go straight back from the coin sensor. If the wire goes forward it could break the beam of the coin sensor and show an error on the UIC.

NOTE: There are two 4 pin connectors on the washer wire harness in the metercase. The connector with the colored mark on it is for coin 2. If the wire harness is color coded, white is for coin 1 and black is for coin 2

COIN VAULT SWITCH

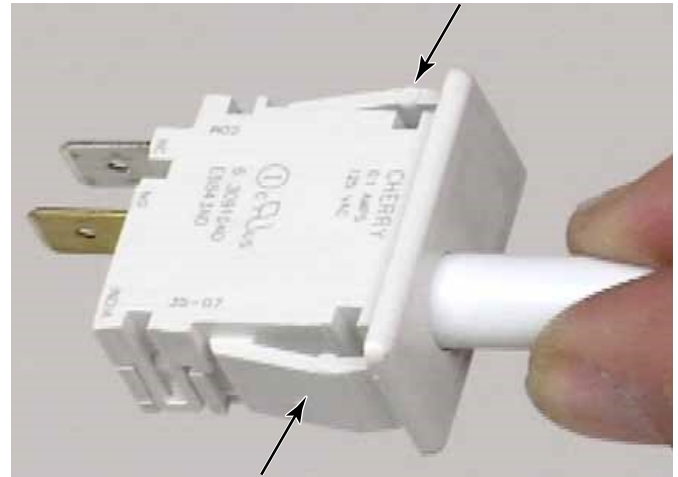
⚠ WARNING

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.

1. Unplug washer or disconnect power.
2. Remove the service access door on the back top of the metercase.
3. Remove the coin vault.
4. Disconnect the wire harness connector from the switch in the service access area.



NOTE: It is quite easy to incorrectly install the Service and Vault Switch wire harness. Mark the wires for the switch that they go to prior to disassembly. This will make it much easier to remember the correct orientation and avoid a miswired issue.

5. Squeeze the tabs on the top and bottom of the switch from inside the service access area and push the switch into the coin vault compartment.




NOTE: If the coin vault switch is not wired or the coin box is not installed the washer display will be flashing.

---- NOTES ----

COMPONENT TESTING

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

- Control failure can be the result of corrosion of connectors. Therefore, disconnecting 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. Look for broken or loose wires, failed terminals, or wires not pressed in to connectors far enough.
- Resistance checks must be made with power cord unplugged from the outlet, and with wiring harness or connectors disconnected.
- Unless stated otherwise, make all resistance checks by disconnecting the component connector at the Central Control Unit (CCU).

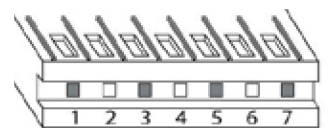
	⚠ WARNING
	Electrical Shock Hazard
	Disconnect power before servicing. Replace all parts and panels before operating. Failure to do so can result in death or electrical shock.



INLET VALVE SOLENOIDS

To check the inlet valve solenoids at the CCU perform the following steps.

1. Unplug washer or disconnect power.
 2. Disconnect the inlet valve solenoid connector DI6 and VCH7 from the CCU.
 3. Set the ohmmeter to the R X 100 scale.
 4. Touch the ohmmeter test leads to the following connector pins. The meter should indicate $1,000 \pm 50\Omega$.
- VCH7 Connector
Pins 1 & 3 (cold #2)
Pins 5 & 7 (cold #3)
 - DI6 Connector
Pins 1 & 3 (hot #1)



COLD #2 COLD #3
Connector VCH7 at CCU



⚠ WARNING

Electrical Shock Hazard

Disconnect power before servicing.

Replace all parts and panels before operating.

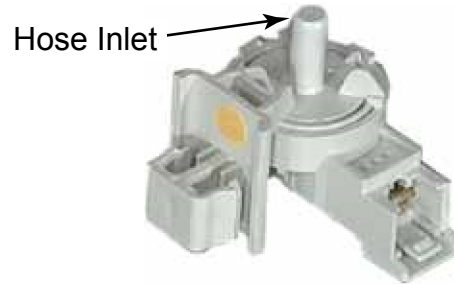
Failure to do so can result in death or electrical shock.

PRESSURE TRANSDUCER

See page 4-19 for the procedure to access the pressure transducer.

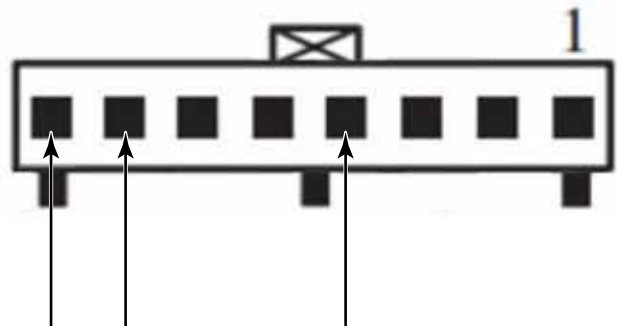
To check the pressure transducer at the component terminals, perform the following steps with no water in the washer.


1. Unplug washer or disconnect power.
2. Disconnect the wire connector and hose from the pressure transducer.
3. Set the ohmmeter to the R X 1 scale.
4. Touch the ohm meter leads to any two of the terminals. The meter should indicate an open circuit (infinite Ω) between any combination of the three contacts.



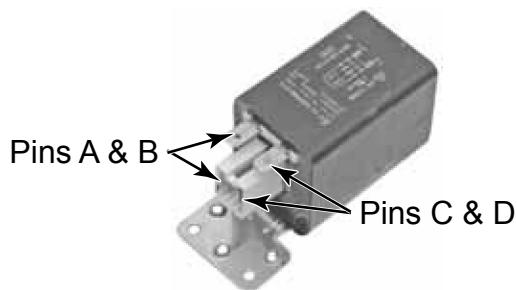
To check the pressure transducer at the CCU, perform the following steps with no water in the washer.

1. Unplug washer or disconnect power.
2. Disconnect pressure transducer connector PS8 from the CCU.
3. Set the ohmmeter to the R X 1 scale.
4. Touch the ohmmeter test leads to any combination of connector pins 4, 7 and 8. The meter should indicate an open circuit (infinite Ω).



	⚠ WARNING
	<p style="text-align: center;">Electrical Shock Hazard</p> <p>Disconnect power before servicing.</p> <p>Replace all parts and panels before operating.</p> <p>Failure to do so can result in death or electrical shock.</p>

RFI LINE FILTER



See page 4-18 for the procedure to access the RFI line filter.

To check the RFI line filter at the component terminals, perform the following steps.

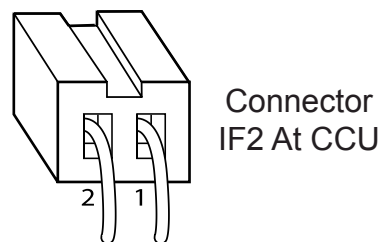
1. Unplug washer or disconnect power.
2. Disconnect the wire connectors from the RFI line filter.
3. Set the ohmmeter to the R X 1 scale.
4. Touch the ohmmeter test leads to the following connector pins (shown above). The meter should indicate 0Ω for each measurement.

Pins A and B

Pins C and D

To check the RFI line filter at the CCU, perform the following steps.

1. Unplug washer or disconnect power.
2. Disconnect the RFI line filter connector IF2 from the CCU.
3. Set the ohmmeter to the R X 1 scale.
4. Touch the ohmmeter test leads to wire harness connector pins 1 and 2. The meter should indicated 0Ω.



RFI LINE FILTER POLARITY TEST

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.

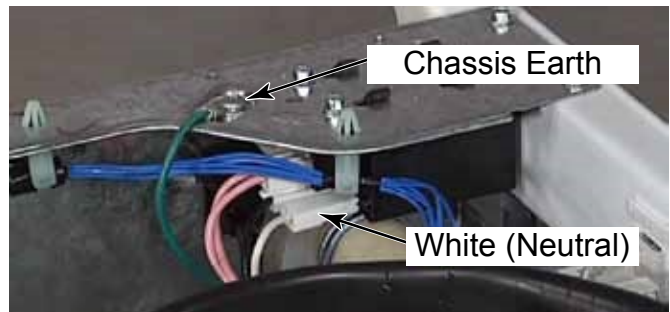
Voltage Measurement Safety Information

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.

1. To check for proper polarity, unplug washer or disconnect power.
2. Connect voltage measurement equipment between the white wire on the RFI line filter and any chassis earth connection point.
3. Plug in washer or reconnect power.
4. If polarity is correct there should be no voltage present
5. Unplug washer or disconnect power.

NOTE: If voltage is present, have an electrician correct the wiring in the electrical power outlet for proper polarity.



NOTE: Problems can occur with this washer if the AC power is connected with reverse polarity. When properly installed, the White (neutral) wire connector should be toward front of washer as viewed from RFI filters installed orientation.



⚠ WARNING

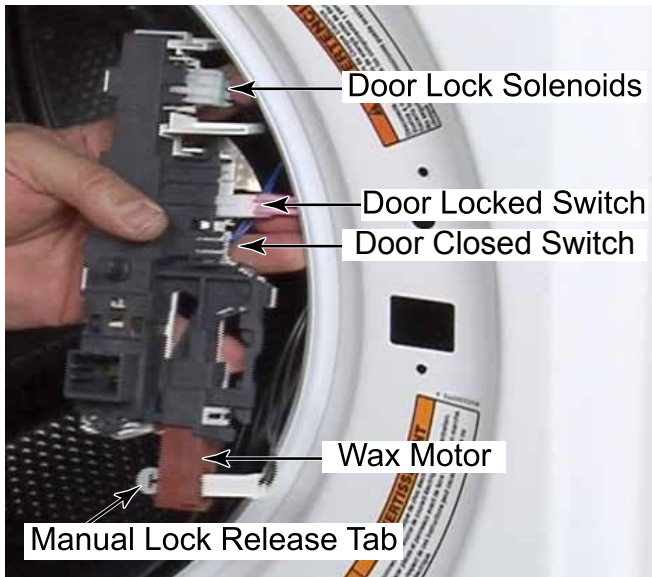
Electrical Shock Hazard

Disconnect power before servicing.

Replace all parts and panels before operating.

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

DOOR LOCK ASSEMBLY



See page 4-22 for the procedure to access the door lock assembly.

To check the door switch at the CCU, perform the following steps.

1. Unplug washer or disconnect power.
2. Disconnect the door lock / unlock solenoids connector DL3 from the CCU.
3. Set the ohmmeter to the R X 1 scale.
4. To test the door lock / unlock solenoids, touch the ohmmeter test leads to the indicated pins of connector DL3. The meter should indicate as follows:

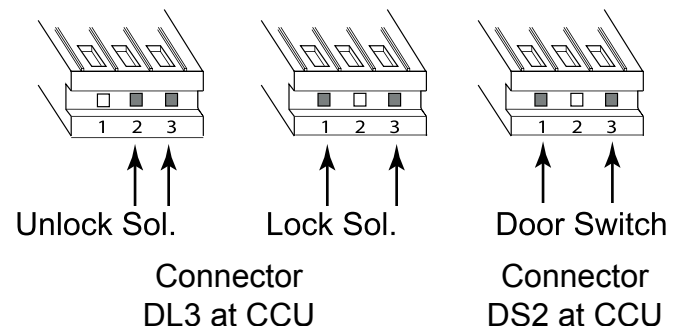
Door unlock solenoid - Pins 2 & 3 = 60Ω
 Door lock solenoid - Pins 1 & 3 = 60Ω

5. Disconnect the door switch connector from the CCU.

6. To test the door switch, touch the ohmmeter test leads to pins 3 and 1 at DS2. The meter should indicate as follows:

Door closed = closed circuit (0Ω)

Door open = open circuit (infinite Ω)



7. To test the wax motor perform the following steps.

1. Unplug washer or disconnect power.
2. Remove the latch assembly.
3. Disconnect connector from wax motor.
4. Touch the ohm meter test leads to the wax motor terminals. Reading should be approximately $1.3K\Omega$.
5. To check the wax motor from the CCU, pull terminal from the HE2 connector on the CCU and the reading from the harness connectors should be approximately $1.3K\Omega$.



⚠ 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.

DRAIN PUMP MOTOR



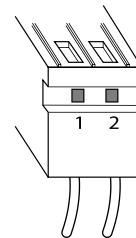
See page 4-29 for the procedure to access the drain pump motor.

To check the drain pump at the component terminals, perform the following steps.


1. Unplug washer or disconnect power.
2. Disconnect the wire connector from the drain pump.
3. Set the ohmmeter to the R X 1 scale.
4. Touch the ohmmeter test leads to the drain pump terminals. The meter should indicate approximately 106Ω .

To check the drain pump at the CCU, perform the following steps.

1. Unplug washer or disconnect power.
2. Disconnect the drain pump connector DP2 from the CCU.
3. Set the ohmmeter to the R X 1 scale.
4. Touch the ohmmeter test leads to connector pins 1 and 2. Meter should indicate 106Ω .



Connector DP2 at CCU



⚠ 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.

TEMPERATURE SENSOR



See page 4-37 for the procedure to access the temperature sensor.

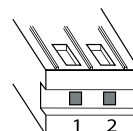
To check temperature sensor at component terminals, perform the following steps:

1. Unplug washer or disconnect power.
2. Disconnect the wire connector from the temperature sensor.
3. Set the ohmmeter to the R X 1K scale.
4. To check the temperature sensor, touch the ohmmeter test leads to the sensor terminals. The meter should indicate as shown in the chart below.

Temperature	Result
0°C (32°F)	35.9 kΩ
30°C (86°F)	9.7 kΩ
40°C (104°F)	6.6 kΩ
50°C (122°F)	4.6 kΩ
60°C (140°F)	3.2 kΩ
71°C (158°F)	2.3 kΩ
96°C (203°F)	1 kΩ

To check the temperature sensor at the CCU, perform the following steps.

1. Unplug washer or disconnect power.
2. Disconnect the temperature sensor connector TH2 from the CCU.
3. Set the ohmmeter to the R X 1K scale.
4. Touch the ohmmeter test leads to connector pins 1 and 2. The meter should indicate as shown in the previous chart.



Connector
TH2 at CCU

Cycle Temperature Selections (all rinses are COLD)		
Cycle	Wash Temp	Temperature
WHITES	Hot	43°C (109°F)
COLORS	Warm 1	31°C (88°F)
QUICK CYCLE	Warm 1	31°C (88°F)
DELICATES & KNITS	Warm 2	18°C (64°F)
BRIGHTS	Cold	Tap Cold



⚠ WARNING

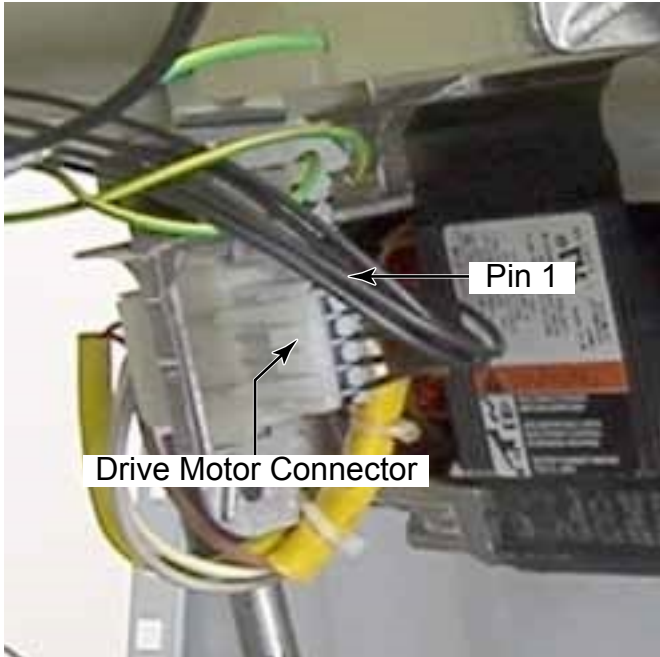
Electrical Shock Hazard

Disconnect power before servicing.

Replace all parts and panels before operating.

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

DRIVE MOTOR




See page 4-35 for the procedure to access the drive motor.

1. Unplug washer or disconnect power.
2. Disconnect the 5-wire connector from the drive motor.
3. Set the ohmmeter to the R X 1 scale.
4. Touch the ohmmeter test leads to the following motor pins. For each measurement, the meter should indicate approximately 6.45Ω .

Pins 1 and 2

Pins 2 and 3

Pins 1 and 3



⚠ 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.

USER INTERFACE KEYPAD ASSEMBLY

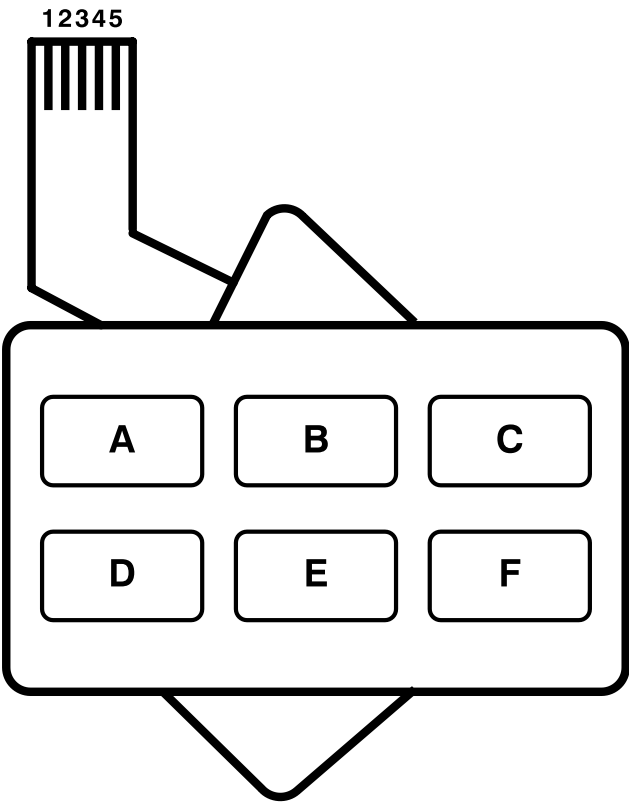
See page 6-8 for diagnostic button test, or the following procedure can be performed with an ohm meter.


See page 4-10 for the procedure to access the keypad assembly.

1. Unplug washer or disconnect power.
2. Set the ohmmeter to the R X 1 scale.
Set digital ohmmeters to lowest scale.
3. Touch the ohmmeter test leads to the ribbon contacts listed. Press the button listed for each pair of contacts. The meter should indicate continuity (0Ω). If the meter indicates an open circuit (infinite Ω), replace the keypad assembly.

6 Button User Interface Keypad Assembly

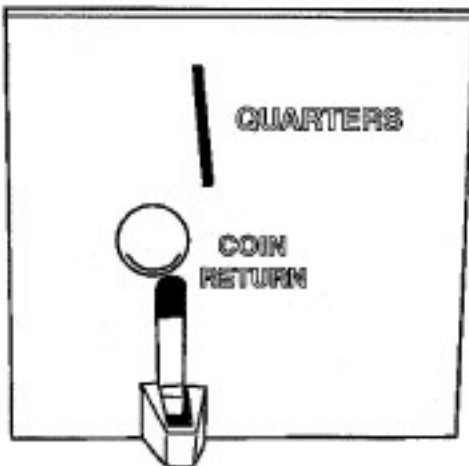
Button	Ribbon Contacts
A	1 and 3
B	1 and 2
C	1 and 4
D	3 and 5
E	2 and 5
F	4 and 5



	⚠ WARNING
	<p style="text-align: center;">Electrical Shock Hazard</p> <p>Disconnect power before servicing.</p> <p>Replace all parts and panels before operating.</p> <p>Failure to do so can result in death or electrical shock.</p>

COIN DROP ACCEPTOR

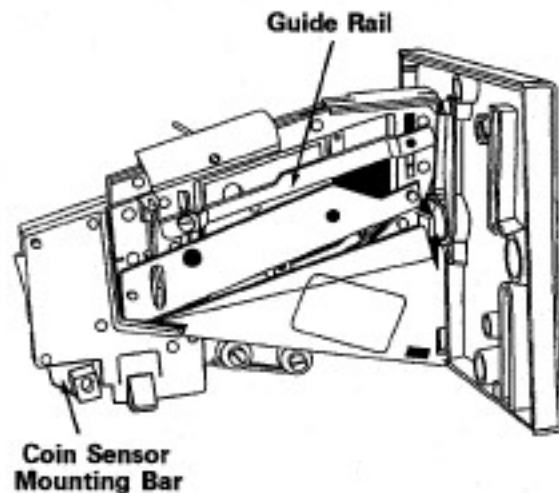
This is a mechanical coin drop assembly with a coin sensor attached. In normal use, occasional cleaning in hot water is all that is needed to maintain reliable operation of the coin drop acceptor. The coin drop does not need to be oiled, as it will only cause dirt and dust to collect or build up. This can disrupt the operation of the acceptor.




The coin drop assembly checks the diameter, thickness and magnetic properties of the coin.

There is a coin return button that can be pressed if the coin jams in the coin acceptor. When it is pressed, the button presses against a tab which is pushed to one side spreading the coin acceptor plates apart. This allows the coin to fall and roll into the coin return bail area. The face plate has a coin bail (arched area for the coin) which is located at the base of the coin return slot. The face plate can be removed from the coin acceptor. Remove two screws from the back side of the face plate.

The coin sensor is mounted to a bar located at the back of the coin acceptor. There is a window period for a coin to pass the coin sensor. If the coin fails to pass through at a certain speed, the microprocessor may assume the washer is being tampered with or it is a non-valid coin. The washer will then go into a standby mode and will not accept coins. The coin sensor is set in position at the time of manufacturing for the proper reading of coins.



A guide rail on the left plate of the coin drop assembly is adjustable (both at the front and back) to accept proper diameter coins, yet reject oversized coins. Adjust the front and back pins in the guide rail to just miss the quarter and tighten the front guide rail screws.

	⚠ 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.

TRANSFORMER

1. Unplug washer or disconnect power.
2. Set the ohmmeter to the R X 1 scale.
Set digital ohmmeters to lowest scale.
3. Touch the ohmmeter test leads to the contacts listed below. The meter should indicate as shown in the chart below. If the meter indicates an open circuit (infinite Ω), replace the transformer.

Primary (Black to Black) 220 Ω
White to White 3 Ω
Green to Green 1.2 Ω



NOTE: For visual clarity, the control panel bracket in this photo has been rotated up on top of the washer to show the transformer. The control panel bracket does not need to be removed to remove the transformer.



⚠ WARNING








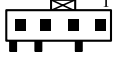

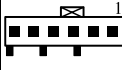
Electrical Shock Hazard

Disconnect power before servicing.

Replace all parts and panels before operating.


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

CCU WIRE HARNESS CONNECTOR TABLE

Terminal	Component	(Ω) Ohm Value	Abnormal Value	Pin Connectors*	Wire Coding
RP2	Wax Motor	1.2k Ω at 25°C	Infinity**	1, 2	
DLS2	Door Locked Switch Locked/Unlocked	Continuity: door locked. No Continuity: door unlocked.		1, 2	
DL3	Door Lock Coil Locked or Unlocked	165 Ω	Infinity**	1, 2 door lock 2, 3 door unlock	
SET2	Temperature Sensor	Varies with temperature changes. See above.	Infinity**	1, 2	
DP2	Drain Pump	13 Ω	Infinity**	1, 2	
DCS3	Door Switch	Continuity at door close. No continuity at door open.		1, 2	
VSF2	Hot Inlet Valve #1	812 Ω	Infinity**	1, 3 (hot valve #1)	
VCH7	Cold Inlet Valve #3 Cold Inlet Valve #2	812 Ω , either coil	Infinity** (or more than 10% lower or higher)	1, 3 (cold valve #3) 5, 7 (cold valve #2)	
IF2	RFI/UIC Transformer	30 Ω	Infinity** (or more than 10% lower or higher)	1, 2	
PS8	Pressure Switch	Infinity**		4, 7, and 8	

*The number 1 pin has been marked on the bottom part of the connector.

**An infinity measurement occurs when the multimeter does not detect an ohm reading.



⚠ WARNING

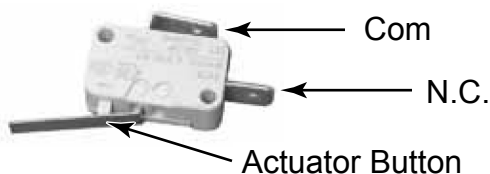
Electrical Shock Hazard

Disconnect power before servicing.

Replace all parts and panels before operating.

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

EARTH SWITCH

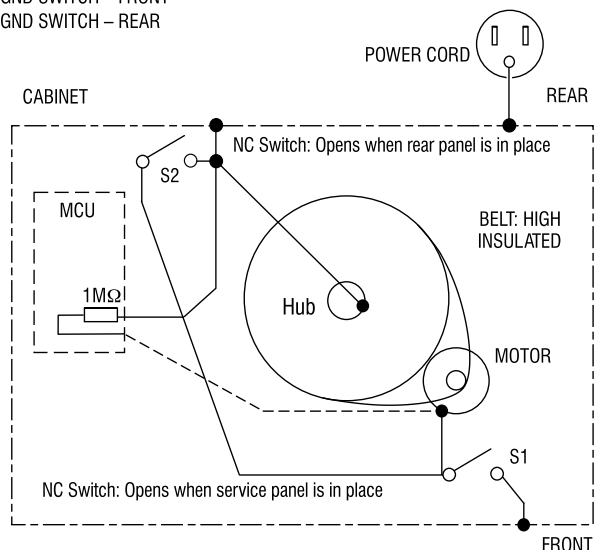


Earthing switches are in place to earth the motor circuit while a service panel is removed from the washer. Operating the washer with a service panel removed can cause a communication error failure code.

See page 4-30 for the procedure to access an earth switch.

1. Unplug washer or disconnect power.
2. Disconnect the wire connectors from either of the earth switch terminals.
3. Set the ohmmeter to the R X 1 scale.
4. Touch the ohmmeter test leads to the two earth switch terminals. The meter should indicate an open circuit (infinite Ω) with the actuator button pushed in, and a Closed circuit (0 Ω) with the actuator button released.

S1 = GND SWITCH – FRONT
S2 = GND SWITCH – REAR



---- NOTES ----

DIAGNOSIS AND TROUBLESHOOTING

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.

Before servicing, check the following:

- Make sure there is power at the wall outlet.
- Are both hot and cold water faucets open and water supply hoses unobstructed?
- Check all connections before replacing components. Look for broken or loose wires, failed terminals, or wires not pressed into or onto connections far enough.
- A potential cause of a control not functioning is corrosion on connections. Observe connections and check for continuity with an ohmmeter.
- Connectors: Inspect top of connector. Check for broken or loose wires. Check for wires not pressed in to connectors far enough to engage metal barbs.
- Resistance checks must be made with the power cord unplugged from outlet, and with wiring harness or connectors disconnected.

WASHER DIAGNOSTIC MODE

To enter the 'Washer Diagnostic Mode,' first enter "Set-Up Mode." (See page 3-4) Then press and hold the QUICK CYCLE button for 1 second while in set-up code 6xx, anytime a diagnostic code is present, or while dAS displays if operating with Maytag Data Acquisition setup. On entry to Diagnostic Mode, the entire display will flash, a cycle in process is canceled, money in escrow is cleared, and diagnostic codes are cleared. If a diagnostic code persists, it must be corrected before the following cycle options are permitted. There are five possible ways to initiate cycle activity from Diagnostic Mode as follows:

1. Washer Cleanout Cycle – With the entire display flashing, this cycle is started by pressing the STOP/PAUSE button. Use the Washer Cleanout Cycle once a month to keep the inside of the washer fresh and clean. This cycle uses a higher water level. Use with liquid chlorine bleach to thoroughly clean the inside of the washer. This cycle should not be interrupted. **IMPORTANT:** Do not place garments or other items in the washer during the Washer Cleanout Cycle. Use this cycle with an empty spin basket.
2. Cycle Credit – With the entire display flashing, a cycle may be credited by pressing the BRIGHTS button (CC will display). When the Service Mode is exited, 'SELECT CYCLE' will be displayed unless the end-of-cycle door opening is required.
3. Manual Overview Test – With the entire display flashing, this cycle is started by pressing the WHITES button. This cycle provides more typical full length fills, tumbles, and drains, allowing for a more thorough analysis of the washer operation, including pressure transducer behavior.

FAILURE / DIAGNOSTIC DISPLAY CODES

4. Quick Spin Cycle – With the entire display flashing, this cycle is started by pressing the COLORS button. This cycle provides a method to quickly drain and spin (remove water from the washer), if desired.

5. Quick Overview Test – With the entire display flashing, this cycle is started by pressing the DELICATES & KNITS button. This cycle provides a quick verification that the cold and hot water valves and pump motor are working. It also includes door lock, drain, and spin operations. Pressing the QUICK CYCLE button will exit Diagnostic Mode and cancel a diagnostic cycle in process.

ACCU TRAC® INDICATION	WASHER DISPLAY	EXPLANATION AND RECOMMENDED PROCEDURE
<i>d 5</i>	<i>F 01</i>	CCU ERROR
		The pump drive or one of the main relays in the CCU fails to activate.
		Possible Cause – A power surge/drop. Surge/drop procedure 1. Clear error code. 2. Unplug washer or disconnect power. 3. Wait 2 minutes before reconnecting power. 4. Verify CCU by running a short diagnostic test. If this procedure does not correct the failure, replace the CCU control.
<i>d 11</i>	<i>F 11</i>	MCU ERROR
		Motor Control Unit (MCU) has a failure.
		Possible Cause – A repeating under or overvoltage condition. If the failure occurs during a high-speed spin, the door remains locked for 3 minutes. Procedure 1. Clear error code. 2. Unplug the washer or disconnect power. 3. Using Ohm meter, check wire harness connections for continuity between drive motor and the MCU. 4. Check the motor and do a continuity test (page 14). 5. The MCU is good if the motor operates in diagnostic mode. If the motor fails to turn on, replace the MCU.
<i>d 2</i>	<i>F 03</i> <i>F 04</i>	ACCELEROMETER FAILURE
		The accelerometer component failed. The X, Y, and Z limits are outside of the normal range.
		Possible Causes – CCU dislodged from mounting. – Accelerometer failure on CCU.

ACCU TRAC® INDICATION	WASHER DISPLAY	EXPLANATION AND RECOMMENDED PROCEDURE
<i>d 7</i>	<i>F 20</i>	NO WATER DETECTED ENTERING WASHER
		<p>The error occurs when the first level of the pressure switch is not reached within 6 minutes, or the second level is not reached within 6 minutes of reaching the first level. The UI will display "no h2o" once the error occurs and will continue to display until the door is opened. The user is allowed to start the next cycle once payment is made.</p> <p>Possible Causes</p> <ul style="list-style-type: none"> – No water to washer; faucet(s) turned off. – Defective hot and/or cold valve(s). – Plugged or kinked inlet hoses or valves. – Pressure switch or pressure switch hose damaged, kinked, or disconnected. – Electrical connection from CCU (PR6) to pressure switch damaged. – Drain hose forced down into standpipe > 6" (152 mm). – Blocked inlet from dispenser to tub. <p>Procedure If the F20 error code persists, perform the following steps:</p> <ol style="list-style-type: none"> 1. Unplug washer or disconnect power. 2. Check incoming water pressure at faucet. 3. Check inlet hoses for possible leaks. 4. Make sure pressure switch hose is in good condition and properly connected to tub and pressure switch. 5. Verify that water is not running out of the drain hose (siphoning) as it is filling. 6. Perform continuity test on wire harness connections from CCU to inlet valves (VCH7 & VSF2), pressure switch (PR6), and drain pump (DP2). 7. Check inlet valves by running a diagnostic test; if water fills too slowly, replace the appropriate inlet valve. 8. Check that the pump is not running while the washer is filling. 9. Verify pressure switch operation by accessing Help Mode while running a paid cycle (see Help Mode Symbols and Elements, page 13).
<i>d 8</i>	<i>F 21</i>	LONG DRAIN
		<p>The drain time exceeds 8 minutes without reaching reset level in pressure switch.</p> <p>NOTE: ■ Suds can cause delays in draining, indicated by an alternating display of "Suds" and a countdown timer. Washer drains for 4 minutes, pauses 5 minutes, then tries again for 4 additional minutes of draining. F21 will display if washer does not drain. (Normal drain takes less than 2 minutes).</p> <p>Possible Causes</p> <ul style="list-style-type: none"> – Damaged or blocked pump. – Washer fills during drain. – Excess suds causing cavitating pump. – Drain hose blocked, kinked, or exceeds recommended height. – Poor connection between CCU (DP2) and drain pump. <p>Procedure</p> <ol style="list-style-type: none"> 1. Clear error code. 2. Unplug washer or disconnect power. 3. Make sure the drain hose is not sealed in the standpipe. 4. Make sure the drain height is not more than 8 ft above the base of the washer. 5. Check the drain hose and make sure it is not plugged or kinked. 6. Check the drain pump for foreign objects or worn impeller. 7. Check the electrical connection between the pump and the CCU (DP2). 8. Check the pump using a diagnostic mode. 9. Check pressure switch operation in Help Mode and the condition of the pressure switch hose. <p>If all the above are OK and pump is powered but does not pump water or water flow is poor, replace the pump.</p>

ACCU TRAC® INDICATION	WASHER DISPLAY	EXPLANATION AND RECOMMENDED PROCEDURE
<i>d 17</i>	<i>F 22</i>	DOOR LOCK ERROR
		<p>Washer will make several attempts to lock the door, then customer will be asked to open door, clear obstructions, shut door, and reselect cycle. Washer will attempt to lock the door again. This procedure can repeat 2 times before customer loses vend and washer resets. If entire procedure happens twice without a successful door lock, F22 will appear.</p> <p>Possible Causes</p> <ul style="list-style-type: none"> – Misaligned or broken door latch. – Electrical connections from CCU (DLS2, DL3) to door lock are damaged. – Misaligned, broken, or overtightened door hook. <p>Procedure</p> <ol style="list-style-type: none"> 1. Clear error code. 2. Unplug the washer or disconnect power. 3. Make sure that the latch is secured to the front panel. 4. Check for misaligned, broken, cracked, or loose door hook. 5. Check the electrical connections between CCU (DLS2, DL3) and latch. <p>If the latch fails to lock after checking all of the above, replace the latch.</p>
<i>d 24</i>	<i>F 24</i>	TEMPERATURE SENSOR ERROR
		<p>Water temperature sensor value is out of range (23°F to 217°F [-5°C to 103°C]).</p> <p>NOTE: To find correct Ohm reading, refer to the Water Temperature Sensor section, page 14.</p> <p>Possible Causes</p> <ul style="list-style-type: none"> – Water temperature sensor damaged. – Electrical connections from CCU at SET2 to temperature sensor damaged. <p>Procedure</p> <ol style="list-style-type: none"> 1. Clear error code. 2. Unplug the washer or disconnect power. 3. Perform Ohm test on Water Temperature Sensor and harness connection. This reading can be taken from the cable attached to CCU at SET2. <p>If the water temperature sensor is out of range, replace it.</p>

ACCU TRAC® INDICATION	WASHER DISPLAY	EXPLANATION AND RECOMMENDED PROCEDURE
<i>d 12</i>	<i>F 25</i>	TACHOMETER ERROR
		<p>If the MCU is unable to properly detect motor speed, the washer shuts down. If a failure occurs during high-speed spin, the door remains locked for 2 minutes.</p> <p>Possible Cause</p> <ul style="list-style-type: none"> – Damaged or poor contact in electrical connection from MCU to drive motor. <p>Procedure for damaged MCU connection</p> <ol style="list-style-type: none"> 1. Clear error code. 2. Unplug the washer or disconnect power. 3. Check for broken belt. 4. Verify that the shipping system, including shipping bolts and spacers, is removed, and that the power cord is not tangled in any components inside rear of washer. 5. Verify electrical connection between MCU and drive motor connector. 6. Reassemble any disassembled parts. 7. Reconnect to power. 8. Check operation of drive motor in diagnostic mode; if drum tumbles, the MCU and motor are OK. <p>If, after this procedure, the drum fails to tumble, replace the MCU. If motor operation is not restored, replace the motor.</p>
<i>d 4</i>	<i>F 26</i>	DOOR SWITCH ERROR
		<p>The door switch circuit is open for 5 seconds while the door is locked.</p> <p>Possible Cause</p> <ul style="list-style-type: none"> – Electrical connections from CCU (DCS3) to door switch in latch are damaged. <p>Procedure</p> <ol style="list-style-type: none"> 1. Clear error code. 2. Unplug the washer or disconnect power. 3. Verify the electrical connection between CCU and door switch by using the Help Mode (see appropriate symbols, page 13) or continuity test at CCU (DCS3) connection. <p>If the door switch circuit fails to open or close, replace the door latch.</p>

ACCU TRAC® INDICATION	WASHER DISPLAY	EXPLANATION AND RECOMMENDED PROCEDURE
<i>d 21</i>	<i>F 27</i>	OVERFLOW CONDITIONS
		<p>The overflow contact on the pressure switch is closed for more than 60 seconds. If the washer displays F27, the washer is probably full of water, and the water supply has been shut off. If not, water will be pouring out of the washer from the dispenser and door.</p> <p>Possible Causes</p> <ul style="list-style-type: none"> – Inlet valve(s) unable to close. – Pressure switch hose is kinked. <p>Procedure</p> <ol style="list-style-type: none"> 1. Clear error code. 2. Unplug the washer or disconnect power. 3. Remove electrical connections for cold and hot inlet valves. If water continues to flow into washer, inlet valve needs to be replaced. 4. Check if pressure switch hose is kinked. 5. Verify functionality of inlet valves by running a diagnostic cycle.
<i>d 20</i>	<i>F 28</i>	COMMUNICATION FAILURE BETWEEN CCU AND MCU
		<p>The communication between the Central Control Unit (CCU) and the Motor Control Unit (MCU) has failed.</p> <p>Possible Cause</p> <ul style="list-style-type: none"> – Communication cable from CCU (MI3) to MCU is damaged. <p>Procedure for communication cable</p> <ol style="list-style-type: none"> 1. Clear error code. 2. Unplug the washer or disconnect power. 3. Perform continuity test on wire harness connections from CCU (MI3) to MCU (be careful not to spread the Rast connector ends). 4. Verify the drive motor operation in diagnostic mode. If drum fails to tumble, replace the MCU.

ACCU TRAC® INDICATION	WASHER DISPLAY	EXPLANATION AND RECOMMENDED PROCEDURE
<i>d 19</i>	<i>F 29</i>	DOOR UNLOCK ERROR
		The door is unable to unlock after 6 tries. Possible Causes – Misaligned or broken door latch. – Electrical connections from CCU (DLS2, DL3) to door lock are damaged. – Misaligned, broken, or overtightened door hook. Procedure 1. Clear error code. 2. Unplug the washer or disconnect power. 3. Manually unlock the door (page 14). 4. Make sure that the latch is secured to the front panel. 5. Check for misaligned, broken, cracked, or loose door hook. 6. Check the electrical connections between CCU (DLS2, DL3) and latch (see page 14). If the latch fails to unlock after checking all of the above, replace the latch.
<i>d 10</i>	<i>F 31</i>	OVERHEATING OF MOTOR
		The heat sink exceeds 212°F (100°C). If this condition is met, the CCU resets the MCU, then waits for the motor to cool down before restarting the motor. This procedure can repeat up to 4 times before F31 is displayed. Possible Causes – Improper installation of washer. – Poor electrical connection from CCU (MS2) to MCU. Procedure 1. Clear error code. 2. Unplug the washer or disconnect power. 3. Verify the washer is not located near a source of heat and has proper ventilation. 4. Check the electrical connections between CCU (MS2) and MCU. 5. Verify the drive motor operation in diagnostic mode. If, after the above tests, the motor overheats, replace the MCU.

ACCU TRAC® INDICATION	WASHER DISPLAY	EXPLANATION AND RECOMMENDED PROCEDURE
<i>d 14</i>	<i>F 33</i>	PUMP DISCONNECTED
		The electrical connection between the pump and the CCU is lost. Possible Causes – Poor connection between CCU (DP2) and drain pump. – Pump thermal overload caused by the pump running for an extended period of time. Procedure 1. Clear error code. 2. Unplug the washer or disconnect power. 3. Check electrical connection between pump and CCU (DP2) (see page 14). 4. Check the pump using a diagnostic mode. If all of the above are OK and the pump still does not run, replace the CCU.
<i>d 15</i>	<i>F 34</i>	LOAD DETECTED IN WASHER DURING WASHER CLEANOUT CYCLE
		The washer detects a load inside the washer tub at the beginning of the Washer Cleanout Cycle. Possible Causes – Load inside the washer during the Washer Cleanout Cycle. – Friction between the drum and bellows material. Procedure 1. Clear error code. 2. Unplug the washer or disconnect power. 3. Remove clothes from washer drum. 4. Verify that misalignment of the spin basket and the T bearing on the boot is not causing friction (which is interpreted by the motor as a load in the washer). If bellows adjustment does not correct the friction issue, the spin basket will need to be replaced.
<i>d 23</i>	<i>F 70</i>	COMMUNICATION FAILURE BETWEEN CCU AND UIC
		Communication between Central Control Unit (CCU) and User Interface Control (UIC) has failed. Possible Cause – Electrical connection between CCU and UIC is damaged. Procedure 1. Clear error code. 2. Unplug the washer or disconnect power. 3. Verify that the communication cable is connected in the upper connector of the UIC. 4. Verify continuity in the cable between the CCU and the UIC. If, after these procedures, the continuity test fails, replace the communication cable. If F70 is still present, replace the UIC.

ACCU TRAC® INDICATION	WASHER DISPLAY	EXPLANATION AND RECOMMENDED PROCEDURE
<i>d 3</i>	<i>F 73</i>	UIC FAILURE
	<i>F 74</i>	<p>Communication error within the User Interface Control.</p> <p>Possible Cause</p> <ul style="list-style-type: none"> – A power surge/drop. <p>Procedure</p> <ol style="list-style-type: none"> 1. Clear error code. 2. Unplug the washer or disconnect power. 3. Wait 2 minutes before reconnecting power. 4. Verify UIC by attempting to start a cycle or run diagnostic mode. <p>If these procedures do not correct the failure, replace the UIC.</p>
<i>d 5</i>	<i>d 5</i>	COIN 1 ERROR
		<p>The Coin 1 sensor is detected as blocked for 8 seconds. Before starting this procedure, make sure that the coin sensor is installed. The washer is shipped with the coin sensor not installed on a coin acceptor.</p> <p>Possible Causes</p> <ul style="list-style-type: none"> – Coin vault full of money. – Blocked or dirty sensor. <p>Procedure</p> <ol style="list-style-type: none"> 1. Clear error code. 2. Unplug the washer or disconnect power. 3. Clean the coin sensor. 4. Check for broken coin sensor switch on coin drop. 5. Check the wire harness connections between User Interface (AA4) and the coin sensor switch to make sure wires do not block the coin switch beam. 6. Shorting the connections 2 and 3 at AA4 on UIC will simulate a good coin sensor. <p>If the above procedures do not solve the problem, replace the UIC.</p>
<i>d 9</i>	<i>d 9</i>	LOW VOLTAGE DETECTION ERROR
		<p>Incoming voltage detected below 90vac for 8 seconds.</p> <p>Possible Causes</p> <ul style="list-style-type: none"> – Voltage drop due to multiple washers on same circuit. – Worn outlet. <p>Procedure</p> <ol style="list-style-type: none"> 1. Clear error code. 2. Unplug the washer or disconnect power. 3. Check the wire harness connection between the RFI filter and the transformer. <p>If the above procedures do not solve the problem, replace the UIC.</p>

ACCU TRAC® INDICATION	WASHER DISPLAY	EXPLANATION AND RECOMMENDED PROCEDURE
<i>d 13</i>	<i>d 13</i>	COIN 2 ERROR
		<p>The Coin 2 sensor is detected as blocked for 8 seconds.</p> <p>Possible Causes</p> <ul style="list-style-type: none"> – Coin vault full of money. – Blocked or dirty sensor. <p>Procedure</p> <ol style="list-style-type: none"> 1. Clear error code. 2. Unplug the washer or disconnect power. 3. Clean the coin sensor. 4. Check for blocked coin sensor switch on coin drop. <p>d13 only occurs with coin 2 installed. If the above procedures do not solve the problem, replace the UIC.</p>
<i>d 15</i>	<i>d 15</i>	GENERATION 2 DEBIT CARD READER ERROR
		<p>No communication from installed debit card reader in Generation 2 debit mode for 5 minutes.</p> <p>Possible Causes</p> <ul style="list-style-type: none"> – Card reader Gen 2 not installed, when washer is in Ed mode. – Poor contact or communication cable not connected between UIC (AA3) and the card reader. – Card reader failure. <p>Procedure</p> <ol style="list-style-type: none"> 1. Clear error code. 2. Unplug the washer or disconnect power. 3. Check the wire harness connections between User Interface (AA3) and the debit card reader Gen 2. Do continuity test on cable. 4. Make sure that card reader is Gen 2. 5. Reconnect power and wait for 5 minutes. <p>If the above procedures do not solve the problem, replace the UIC.</p>

Critical errors are indicated as part of the 'out of order' message.

NOTE: Errors d5, d13, and d16 will not stop the ongoing cycle, although they will not allow another cycle to begin until the error is addressed or is self-corrected.

SERVICE ACCESS CODE

This code can be entered to access Service Mode without removing the console. It only functions on washers set up for 0 vend price without any Special Pricing setup, and the Coin/Debit Option must be set to "J._d". If the washer is not in failure mode, the door must be opened to proceed. Service Access Code contains 4 steps. Perform the following steps after opening the door:

1. Press the upper left button.
2. Press the lower right button.
3. Press the upper right button.
4. Press the lower left button.

NOTE: If the Service Access Code procedure is not completed properly, as noted above, there is a 15 second delay before it can be attempted again.

There are 3 options to exit from Service Mode:

1. From Set-Up Code 8, press lower left button for 4 seconds.
2. Wait 2 minutes without touching any buttons (without Diagnostic Modes running).
3. Power down washer, then reapply power.

DIAGNOSTIC TEST

The washer has two different modes of diagnostics:

The Manual Button Function in Diagnostic Sub-Modes:

Allows running of diagnostic cycles. This allows a more thorough analysis of washer operation, running of a Quick Drain and Spin, and crediting of free cycles to the user. A Washer Cleanout Cycle may also be run from this mode.

The Help Mode:

Allows verification of the Help Codes that are currently present on the washer, and to check the software revision of the CCU and UIC. It also gives feedback of the current state of the valves, actuators, sensors, and general state of the washer.

BUTTON FUNCTION IN DIAGNOSTIC SUB-MODES:

The washer is capable of assuming three sub-modes:

1. Code Display
2. Flashing Mode
3. Special Cycle Mode

Code Display:

a) Accessing the Code Display Mode:

This mode can be accessed only when the washer is in error state.

For PD Models:

- Open the service door.
- The current F code or d code will be displayed.
- If the washer is showing an error code, consult "FAILURE/ ERROR DISPLAY CODES", (See page 6-2).

For PN Models:

- Remove the AA1 connector from the UIC board or insert a manual diagnostic card.
- Enter the Service Access Code (See page 6-7) for PN washer models without a key switch installed.
- Insert key and turn, if diagnostic key switch is installed.
- The current F code or d code will be displayed.
- If the washer is showing an error code, consult "FAILURE/ ERROR DISPLAY CODES", (See page 6-2). Displayed error codes that are not listed in this manual are most likely caused by a card reader device. Please contact the card reader manufacturer for explanation of these codes.

b) Functions of the Code Display Mode:

- Display of the current failure code.
- To erase the current error code and access Flashing Mode, press and hold QUICK CYCLE button until display is flashing.
- To access Set-Up Mode, without erasing the current error, press DELICATES & KNITS button for 1 second.

Flashing Mode

This mode allows starting of special diagnostic cycles, running of a Quick Drain and Spin, crediting of free cycles, and access to the Washer Cleanout Cycle.

a) Accessing the Flashing Mode:

For PD Models:

- Open the service door.
- Press and hold QUICK CYCLE button until display is flashing.

For PN Models:

- Remove the AA1 connector or insert a manual diagnostic card.
- The Service Access Code may be used.
- Insert key and turn, if diagnostic key switch is installed.
- When dAS is displayed, press and hold QUICK CYCLE button until display is flashing.

When accessing the Flashing Mode, the display will be blinking, turning all the segments on and off. Any cycle in process is cancelled, any money in customer escrow is cleared, and existing diagnostic codes are cleared.

b) Functions of the Flashing Mode:

- To access the Quick Overview Test, press the DELICATES & KNITS button (See page 6-10).
- To access the Manual Overview Test, press the WHITES button (See page 6-11).
- To run a Quick Drain and Spin, press the COLORS button.
- To access the Washer Cleanout Cycle, press the STOP/ PAUSE button.
- To Credit a Free Cycle, press the BRIGHTS button.
- To Exit Flashing Mode and return to Set-Up Mode, press the QUICK CYCLE button.

Special Cycle Mode:

This describes the diagnostic cycles accessed through the Flashing Mode.

QUICK OVERVIEW TEST

(See page 6-9) To access and initiate this procedure.

- This cycle consists of 9 steps. In each step, the washer will perform a Control Action as described in the table at right. Once the action is completed, the washer will advance to the next step.
- Each step can be differentiated from the others by looking at the display indication.
- To advance to the next step before a control action is complete, press any button except BRIGHTS or QUICK CYCLE.
- To exit the Quick Overview Test at any time, press the QUICK CYCLE button.

Step	DISPLAY INDICATION	Control Action	Actuators to be Checked
1	DELICATES	Door locks, drum turns 1/2 revolution, then door unlocks and relocks.	<ul style="list-style-type: none"> ■ Door lock system ■ Child safety routine ■ Motor control (MCU)
2	PREWASH Note: Prewash flashes on the display and is very easy to miss.	Accelerometer tests are performed.	<ul style="list-style-type: none"> ■ Accelerometer
3	CCU EEPROM Version (EC xx) & KNITS	Fill by both cold water inlet valves (4 liters) into BLEACH compartment.	<ul style="list-style-type: none"> ■ Cold water inlet valves #2 and #3 ■ Pressure switch: Suds Level
4	CCU Software Version (SC xx) WOOLENS	Fill by hot water inlet valve to Wash Level into MAIN WASH compartment.	<ul style="list-style-type: none"> ■ Hot water inlet valve #1 ■ Pressure switch: Wash Level
5	MCU Software Version (S ¹ xx) WHITES	Drum executes tumbling at wash speed (30 sec).	<ul style="list-style-type: none"> ■ Motor ■ Motor control (MCU)
6	MCU Hardware Version (H ¹ xx) BRIGHTS		
7	UIC EEPROM Version (EU xx) COLORS	Drain pump is ON.	<ul style="list-style-type: none"> ■ Drain pump ■ Pressure switch*
8	UIC Software Version (SU xx) PERM PRESS	Drum rotates counter-clockwise and ramps up. Performs unbalance procedure before and after spinning. If not interrupted, the drum will slow and stop; after reaching 0 rpm, the door unlocks and Step 9 will be skipped.	<ul style="list-style-type: none"> ■ Motor ■ Motor control (MCU) ■ Drain pump on
9	DELICATES	This Step is only apparent if Step 8 is MANUALLY ADVANCED prior to the drum reaching 0 rpm (washer pumps out if needed). Door unlocks (washer returns to flashing mode).	<ul style="list-style-type: none"> ■ Door unlock

The drain pump may be running in any of the last 3 steps, depending on the water level in the washer and position of the pressure transducer. * The washer will drain until pressure transducer reaches lowest level for 10 seconds, then moves to next step.

MANUAL OVERVIEW TEST

(See page 6-9) To access and initiate this procedure.

Before replacing any system components, perform this Manual Overview Test.

- This cycle consists of 8 steps. In each step, the washer will perform a Control Action as described in the table at right. Once the action is completed, the washer will move to the next step. Check Exit Condition column.
- Each step can be differentiated from the others by looking at the display indication.
- To move to the next step before a Control Action is complete, press any button except BRIGHTS or QUICK CYCLE.
- To exit the Manual Overview Test at any time, press the QUICK CYCLE button.
- This test will restart on its own once the final step is completed, or until the QUICK CYCLE button is pressed.

Step	DISPLAY	Exit Condition	Control Action	To be Checked
1	DELICATES	On completion only	Door locks, drum turns 1/2 revolution, then door unlocks and relocks.	<ul style="list-style-type: none"> ■ Door lock system ■ Child safety routine
2	PREWASH	On completion only	Accelerometer tests are performed.	<ul style="list-style-type: none"> ■ Accelerometer
3	& KNITS	On key press or if overfill level is detected	Filling with both cold inlet valves.	<ul style="list-style-type: none"> ■ Both Cold Inlet Valves #2 and #3 ■ Overfill level
4	WOOLENS	On key press or completion	Drum executes reversing movement at wash speed (10 min.).	<ul style="list-style-type: none"> ■ Motor ■ Motor Control (MCU)
5	WHITES	On key press or completion	Drain pump is on (4 min.).	<ul style="list-style-type: none"> ■ Drain Pump
6	BRIGHTS	On completion only	Drain pump is on (reach Suds Level plus 10 sec.).	<ul style="list-style-type: none"> ■ Drain Pump
7	COLORS	On key press or completion	Drum rotates counter-clockwise and ramps up to maximum speed.	<ul style="list-style-type: none"> ■ Motor ■ Motor Control (MCU)
8	PERM PRESS	On key press only after rpm = 0 and door is unlocked	Stop motor to 0 rpm. Door unlocks.	<ul style="list-style-type: none"> ■ Motor ■ Motor Control (MCU) ■ Door lock system

The drain pump may be running in any of the last 3 steps, depending on the water level in the washer and position of the pressure transducer.

DIAGNOSTIC TEST QUICK GUIDE

The following table summarizes button function among the diagnostic sub-modes.

Button function in Diagnostic Mode Table

Key Pad Name on Interface	Generic Key Pad Function	User Input	Function in Failure Code Display Mode	Function in Flashing Mode	Function in Diagnostic Cycle Mode
QUICK CYCLE	Mode Select	Press and hold until display flashes.	Erase diagnostic codes and begin flashing mode.	Enter set-up mode.	Cancel cycle, enter set-up mode.
DELICATES & KNITS	Enter/Advance	Press for 1 second	Exit failure code display mode and enter set-up mode without erasing code.	Access Quick Overview Test.	Move to next step.
BRIGHTS	Increment	Press for 1 second	Inactive	Credit a customer cycle.	Move to next step.
WHITES	None	N/A	Inactive	Access Manual Overview Test.	Move to next step.
COLORS	None	N/A	Inactive	Access a Quick Drain & Spin.	Move to next step.
STOP/PAUSE	None	N/A	Inactive	Access Washer Cleanout Cycle.	Move to next step.

HELP MODE

This mode is used to verify the behavior of the washer, along with the operation of a customer cycle. It allows verification of the current status of many switches, actuators, valves, and relays. It also reports the current values of the drum speed, unbalance value, and power used by the MCU.

a) Accessing the Help Mode for PD Models:

- Open the service door.
- Press the DELICATES & KNITS button until the display reads 2.XX.
- Press the BRIGHTS button.
- Press the DELICATES & KNITS button to move to the next option. (See page 6-14)
- If the washer displays an error code, consult the “Failure/ Diagnostic Display Codes” section. (See page 6-2)

b) Accessing the Help Mode in dAS Mode:

- Open the service door or insert a manual diagnostic card.
- The message dAS will appear in the display.
- Press the BRIGHTS button.
- Press the DELICATES & KNITS button to move to the next option (See page 6-14) Help Mode Submenu.
- If the washer displays an error code, consult the “Failure/ Diagnostic Display Codes” section. (See page 6-2)

Exit Help Mode Submenu by pressing the BRIGHTS button.

HELP CODES

Help Code	Description
0F	Oversuds detected during cycle, and washer was not able to resolve an unbalance condition detected during the final spin related to the oversuds detection (via pressure sensor) earlier in the cycle
32	More than 6 unbalance retries during the final spin – spin (and cycle) has been aborted
33	Oversuds detected during wash cycle, and washer was not able to resolve the condition – cycle has been aborted. Washer unable to sense that water has been fully drained within required time, sensing as an oversuds condition
71	Generation 2 debit card cycle polling message out of sequence
74	Generation 2 debit card remaining balance message out of sequence
75	Generation 2 debit card new card balance message out of sequence
88	Invalid messaging state found in da communications comm_suprv () routine

HELP MODE SUBMENU

- This sub-menu consists of 16 steps.
- To change to the next step, press the DELICATES & KNITS button.
- To exit Help Mode and return to Set-Up Mode or dAS mode, press the BRIGHTS button.

Step	Display Indication	Explanation
1	1h.XX	Help Code 1, where XX is the help code number.*
2	2h.XX	Help Code 2, where XX is the help code number.*
3	3h.XX	Help Code 3, where XX is the help code number.*
4	1.X##	Error history code 1, where X is F or d code, and ## is the code number.**
5	2.X##	Error history code 2, where X is F or d code, and ## is the code number.**
6	3.X##	Error history code 3, where X is F or d code, and ## is the code number.**
7	4.X##	Error history code 4, where X is F or d code, and ## is the code number.**
8	SC.XX	CCU software revision, where XX is the software revision number.
9	EC.XX	CCU EEPROM revision, where XX is the EEPROM revision number.
10	SU.XX	UIC software revision, where XX is the software number.
11	EU.XX	UIC EEPROM revision, where XX is the EEPROM number.
12	hE.XX	Where XX is set to -- Increase Cool (18°C), Warm (31°C) and Hot (43°C) water temperatures by 40%.
13	hF.XX	Where XX is set to -- Increase water level by 20% based on load type and size.
14	SPIN XXX	XXX is the current speed of the drum, displayed in rpm.
15	P.XXX	The relative amount of power requested by the motor, where XXX is the value in watts.
16	U.XXX	The unbalance in the system, where XXX is the unbalance value.***

* To erase the 3 Help Codes, press QUICK CYCLE button.

** The Errors displayed in this section are the history errors that have occurred in the washer (not necessarily an error that is in progress). The current error is displayed in the MANUAL BUTTON FUNCTION IN DIAGNOSTIC SUB-MODE.

*** The value 255 and 254 are reserved numbers for specific cases. (255 = unbalance has not been calculated yet, 254 = unbalance could not be calculated).

HELP MODE SYMBOLS AND ELEMENTS

Along with 14 steps of Help Mode, symbols and elements are mapped, at all times, to reflect the state of various inputs and outputs.

Display Symbol	Description
WASH	Water sensed at wash level.
*	Low voltage present (below about 90 VAC).
° (circle above digit)	Door closed.
DOOR LOCKED	Door sensed locked.
COLD	Cold water relay on.
HOT	Hot water relay on.
OR	Door unlock.
AVAILABLE	Drain pump ON.

BUTTON FUNCTION IN HELP MODE TABLE

Key Pad Name on Interface	Generic Key Pad Function	Result While In: Software Version; Spin; Motor Power	Result While Help Code Displays
BRIGHTS	Increment	Exits help code and returns to set-up mode—either dAS displayed or Set-up Code 2.XX.	Exits help code and returns to set-up mode—either dAS displayed or Set-up Code 2.XX.
QUICK CYCLE	Mode Select	Inactive—no result.	Clears all three help codes.
DELICATES & KNITS	Mode Advance	Advances through help sub-mode.	Advances through each help code.

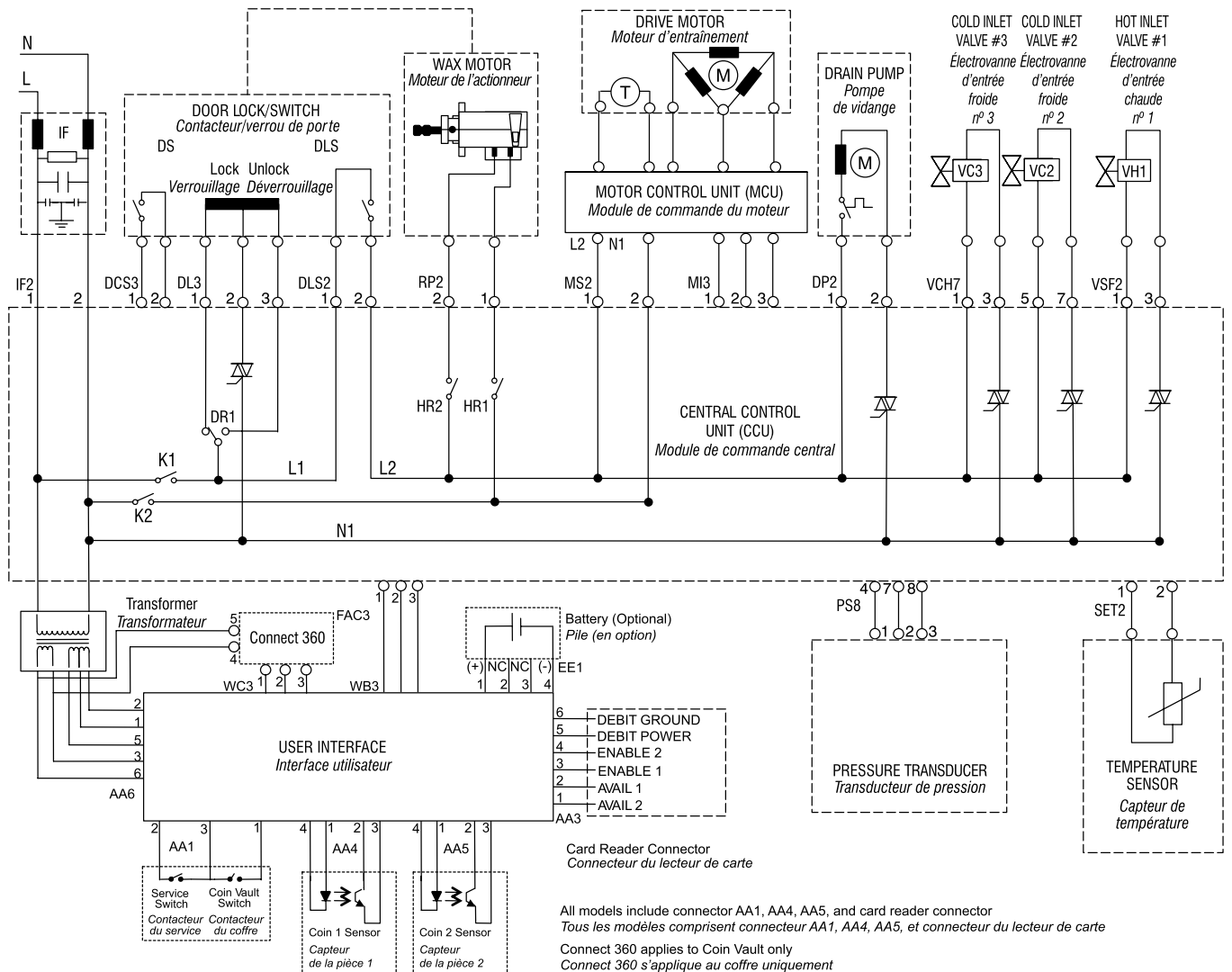
TROUBLESHOOTING GUIDE

PROBLEM	POSSIBLE CAUSE/TEST
	NOTE: Possible Cause/Tests must be performed in the sequence shown for each problem.
BLANK DISPLAY	<p>Possible Causes</p> <ul style="list-style-type: none"> – UIC not powered or no power to the washer. – Wrong communication between CCU and UIC. – Failed transformer. <p>Procedure for UIC not powered</p> <ol style="list-style-type: none"> 1. Check that the washer is plugged into a working outlet. 2. Unplug washer or disconnect power. 3. Check continuity from the power cord to the line filter. 4. Check continuity from the line filter to the transformer. 5. Perform Ohmmeter test on the transformer (page 14). <p>Procedure for wrong communication</p> <ol style="list-style-type: none"> 1. Unplug the washer or disconnect power. 2. Wait for 2 minutes. 3. Reconnect power. <p>If the display fails to turn on, replace the UIC.</p>
WASHER WILL NOT TURN ON WHEN CONNECTED	<ol style="list-style-type: none"> 1. Make sure that the washer is connected to power source. 2. Check continuity in the harness. 3. Verify that the harness fuse is not open. 4. Make sure that the input power connector is firmly attached to the CCU and the UIC transformer connector.
TOUCH-PADS DO NOT RESPOND WHEN PRESSED	<p>Possible Causes</p> <ul style="list-style-type: none"> – Key pad ribbon disconnected, damaged, or contaminated. – Door switch disconnected, loose, or damaged. <p>Procedure if matrix key board is disconnected</p> <p>In this error, the key pad does not respond in any mode (normal operation, set-up, etc.)</p> <ol style="list-style-type: none"> 1. Unplug washer or disconnect power. 2. Check that the key pad ribbon is connected to the UIC. 3. Clean the matrix key pad of soap or other residues. 4. Verify the function of the key pad (see Key Pad Continuity Test, page 13). If it fails to operate, replace it. <p>Procedure if door switch is disconnected</p> <p>In this error, the key pad works normally in set-up mode, but will not start a user paid cycle.</p> <ol style="list-style-type: none"> 1. Verify door switch operation by performing test for F26 error code (page 7), even if the F26 code is not displayed. <p>If the above procedures fail to solve the problem, replace the UIC.</p>
WASHER VIBRATES	<ol style="list-style-type: none"> 1. Verify that the washer is level. 2. Verify that the shipping system, including shipping bolts and spacers, is removed, and that the power cord is not tangled in any components inside the rear of the washer. 3. Verify that the leveling legs are locked into place and firmly in contact with the floor. 4. Check for unbalanced loads, especially when washing very small loads. 5. Verify that dampeners are all connected in place and not damaged. 6. Correct any twists in the door bellows. 7. Verify proper drive belt placement on motor pulley. 8. Make sure that the washer is not installed on a wooden riser with a platform less than 3/4 inches thick.
DRUM WON'T ROTATE	<ol style="list-style-type: none"> 1. Check for broken drive belt. 2. Check for drive motor failure error codes (F11, F25, F28). 3. Make sure that the door locks properly.
INCORRECT WATER TEMPERATURE	<ol style="list-style-type: none"> 1. Make sure that the inlet hoses are connected properly. 2. Check the water temperature sensor for an abnormal condition (page 14). 3. Verify hot and cold water operation in Quick Overview Test in diagnostic mode. 4. Check for blocked filter screen in inlet valves.

NOTE: An approved single check valve needs to be added at the inlets for WRAS compliance.

---- NOTES ----

WIRING DIAGRAM



---- NOTES ----

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