W10251148



# SERVICE MANUAL Maytag Model 30 Commercial Front Loading Washers





MODELS:

MHN30PDAWW0 MHN30PDAXW0 MHP30PRAWW0 MHN30PRAWW0

#### **TECHNICAL EDUCATION**

## FORWARD

This Maytag Service Manual, (Part No. W10251148), provides the Commercial Laundry Service Professional with information on the installation, operation, and service of the single load coin and non coin Model 30 Series Commercial 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 Front Loading Washers. The objectives of this Service Manual are to:

- Understand and follow proper safety messages.
- Understand and diagnose improper installations.
- 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.

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#### INTERACTIVE SERVICE MANUAL INSTRUCTIONS

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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<sup>®</sup> Acrobat<sup>®</sup> Reader<sup>®</sup> version 6 or higher, Windows Media Player for PC and Quicktime Player for Macintosh computers.



## LINKS TO DOCUMENTS

# 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:

ADANGER

## **À WARNING**

You can be killed or seriously injured if you don't <u>immediately</u> 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 ground connection point or unpainted metal in the appliance -OR-Touch your finger repeatedly to a green ground connection point or unpainted metal in the appliance. • Before removing the part from its package, touch the anti-static bag to a green ground connection point or unpainted metal in the appliance.

• Avoid touching electronic parts or terminal contacts; handle electronic control assembly by edges only.

• When repackaging failed electronic control assembly in anti-static bag, observe above instructions.

### MODEL NUMBER DESIGNATIONS

MODEL NUMBER	M	HN	30	PD	A	W	W	0
BRAND								
M Maytag								
DRIVE TYPE								
HN Horizontal Axis Washer Non-Pedesta	ıl							
HP Horizontal Axis Washer w/Pedestal								
AH Automatic Horizontal Axis Washer								
PRODUCT			_					
22 Commercial HE Front Load Washer								
30 Commercial HE Front Load Washer								
CONTROL TYPE								
PD Processor Coindrop								
PR Processor Reader								
PN Processor Non-coin	PN Processor Non-coin							
CS Mechanical Coinslide	CS Mechanical Coinslide							
MN Mechanical Non-coin								
MARKETING CODE								
A First series								
B Second series	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

SERI	AL NUME	BER				HL	0	35	10901	
DIVIS	ION RES	<b>PONS</b>	IBILITY	7						
С	Clyde, C	Dhio								
HL	Monterr	ey, MX								
Μ	Marion,	Ohio								
YEAR	OF PRO	DUCT	ION							
W	2008	2	2012							
Y	2009	3	2013							
0	2010	4	2014							
1	2011	5	2015							
WEE	COF PR	ODUC	ΓΙΟΝ					-		
35	35th We	ek in tl	ne caler	ndar year						
MAN	JFACTU	RING S	EQUE	NCE NUM	BER				-	

#### MODEL & SERIAL NUMBER LABEL AND TECH SHEET LOCATION



### **SPECIFICATIONS**

Model Number	MHN30PDAWW MHN30PDAYW	MHN30PRAWW MHP30PRAWW	
Model Description	Front Load HE Washer		
Color	White / Black Accents Stainless Steel Trim		
Capacity	3.2	2 ft <sup>3</sup>	
6 Cycles	Whites, Colors, Brights, Perm P	ress, Delicates & Knits, Quick	
Temperature Control	NTC - T	hermister	
Pedestal Equipped	No	MHP only	
Sensors	Suds S NTC (The Water Lev	Sensor ermistor) el Sensor	
Wash Speed	Normal =	40 RPM	
Spin Speeds (Owner Adjustable)	Max = 100 Medium = 8 Low = 75 Extra Low =	00 RPM 850 RPM 0 RPM 600 RPM	
Rated Load Size	18	lbs	
Voltage	120 volts		
Frequency	60	Hz	
Max Amp Draw	12 Ar	nps	
US Breaker Rating Amps	15 Ar	nps	
Power Cord Length	6	ft	
MEF	2	.5	
Water Factor	3.7		
Total water use/cycle*	11.955 gallons/cycle*		
Total Hot Water use/cycle*	Hot wash 3.53 gal (13.36 liters) / Warm wash 1.38 gal (5.22 liters		
Controlled Induction Motor Motor Protection HP	Variable Speed, Reversing Thermally Protected		
Height	44.65"	MHP - 44.65" / MHN- 44.65"	
Width	27" (6	68.58 cm)	
Install Depth: Min - Max	28.75"	(730.2 mm)	
Product Weight (crated)	254 lbs	MHP - 234 lbs / MHN-230 lbs	
Product Weight (uncrated)	245 lbs	MHP - 234 lbs / MHN-230 lbs	
Door	180° Opening	/ Non-Reversible	
Money Acceptor	US = Single Coin Drop Canada = Dual Coin Drop	Card Reader Not Included	

\* Average loads based on testing using CSA Standard C360-03/DOE Appendix J1/T396

## WARRANTY

### MAYTAG<sup>®</sup> COMMERCIAL SINGLE-LOAD AND VENDED MULTI-LOAD WASHER & DRYER 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 the instructions attached to or furnished with the product, Maytag brand of Whirlpool Corporation (thereafter "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.
- 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<sup>®</sup> Commercial Laundry distributor. To locate your authorized Maytag<sup>®</sup> Commercial Laundry distributor, or for web inquiries, visit www.MaytagCommercialLaundry.com.

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For written correspondence:

Maytag<sup>®</sup> Commercial Laundry Service Department 2000 M-63 North Benton Harbor, Michigan 49022 USA

### -NOTES -

## **INSTALLATION REQUIREMENTS**

For complete installation instructions See Links to documents page.

#### **Tools and parts**

Gather the required tools and parts before starting installation. The parts supplied are in the washer spin basket.

Tools needed for connecting the water inlet hoses:

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

Tools needed for installation:

- 1/2" inch wrench
- 9/16" open end wrench
- T-20 security screwdriver
- 1/4" nut driver
- Level
- Wood block
- Ruler or measuring tape

Parts supplied:



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

#### Parts supplied for PD Models:





Service Door Lock Cam

Foam Pads

Parts supplied for PR Models:



Card Reader Bezel

Screws (2)

### **ALTERNATE PARTS**

Your installation may require additional parts. If you are interested in purchasing one of the items listed here, call the toll-free number in the "Assistance or Service" section.

If You Have	You Will Need to Buy
Laundry tub or standpipe taller than 96" (2.4 m)	Sump pump system (if not already available)
Overhead sewer	Standard 20 gal. (76 L), 30" (762 mm) 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	4 ft. (1.2 m) drain hose extension kit, Part Number 285863
Water faucet beyond reach of fill hoses	2 longer water fill hoses: 6 ft (1.8 m) Part Number 76314, 10 ft (3.0 m) Part Number 350008

### ACCESSORIES

Enhance your washer with these premium accessories. For more high-quality items or to order, call 1-800-901-2042,

or visit us at www.maytag.com/accessories. In Canada call: 1-800-807-6777

or visit us at www.whirlpoolparts.ca.

Part #	Accessory
8212526	Washer drip tray, fits under all
31682	All purpose appliance cleaner
1903WH	Laundry supply storage cart

#### Pedestal

An optional pedestal is available for the other versions of this model washer. The pedestal will add to the total height of the washer.

**OPTIONS** 



**Optional Pedestal** 

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

**NOTE:** Model MHP30 has pedestal pre-installed.

### LOCATION REQUIREMENTS

Selecting the proper location for your washer improves performance and minimizes noise and possible washer "walk." Your washer can be installed under a custom counter, or in a basement, laundry room, or recessed area. Companion appliance location requirements should also be considered. Proper installation is your responsibility. You will need

- A water heater set to deliver 120°F (49°C) water to the washer.
- A grounded electrical outlet located within 6 ft (1.8 m) of where the power cord is attached to the back of the washer. (See page 2-5).
- Hot and cold water faucets located within 4 ft (1.2 m) of the hot and cold water fill valves, and water pressure of 20-100 psi (137.9-689.6 kPa).
- A level floor with a maximum slope of 1" (25 mm) 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 400 lbs (180 kg).
  Do not operate your washer in temperatures below 32°F (0°C). 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 servicing. 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 1" (25 mm) on all sides of the washer is recommended to reduce noise transfer.
- Companion appliance spacing should also be considered.

#### Washer dimensions:



Door opens 180° and is not reversible.

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



#### **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.

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

The standpipe drain requires a minimum diameter standpipe of 2" (50 mm). The minimum carry-away capacity can be no less than 10 gal. (38 L) per minute.

The top of the standpipe must be at least 30" (762 mm) high and no higher than 96" (2.4 m) from the bottom of the washer. A drain hose extension must be added to reach maximum drain height capability.



Laundry tub drain system (view C)

Laundry tub needs a minimum 20 gal. (76 L) capacity. The top of the laundry tub must be at least 30" (762 mm) above the floor.

Floor drain system (view D)

The floor drain system requires a siphon break that may be purchased separately.

The siphon break must be a minimum of 28" (710 mm) from the bottom of the washer. Additional hoses might be needed.



### **ELECTRICAL REQUIREMENTS**

### **AWARNING**

# 2

**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 120 volt, 60 Hz., AC only, 15 or 20 amp, fused electrical supply is required. A time-delay fuse or circuit breaker is recommended. It is recommended that a separate circuit serving only this appliance be provided.
- Export models require a 220 / 240 volt, 50 Hz, AC power supply and a 10 or 15 amp circuit breaker or time delay fuse. It is recommended that each washer be on its own circuit.
- This washer is equipped with a power supply cord having a 3 prong grounding plug. Export models have various power cord adapters available for use.
- To minimize possible shock hazard, the cord must be plugged into a mating, 3 prong, grounding-type outlet, grounded 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 grounded outlet installed by a qualified electrician.
- If codes permit and a separate ground wire is used, it is recommended that a qualified electrician determine that the ground path is adequate.

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

#### **GROUNDING INSTRUCTIONS**

For a grounded, cord-connected washer: This washer must be grounded. In the event of a malfunction or breakdown, grounding 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-grounding conductor and a grounding plug. The plug must be plugged into an appropriate outlet that is properly installed and grounded in accordance with all local codes and ordinances.

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

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 a grounded metal, permanent wiring system, or an equipment grounding conductor must be run with the circuit conductors and connected to the equipment-grounding terminal or lead on the appliance.

### **REMOVE SHIPPING BOLTS**

### **AWARNING**

**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 rear panel of the washer that support the suspension system during transportation.
- 2. Use a 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 the 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 that 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 wash basket and install, with a clamp, on the drain port at the top right corner of the rear panel.
- 7. Cover the holes that the shipping bolts came out of with the plastic hole plugs shipped with the washer.

### REINSTALL SHIPPING BOLTS

### **AWARNING**

**之**卿

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 re-installed to protect the washer components from damage due to movement of the weights and the tub.
- 2. Unplug washer or disconnect power.
- 3. Turn off the water supply to the washer.

### AWARNING

#### **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 plastic tub spacers onto shipping bolts. Insert each shipping bolt assembly through hole in the rear brace and into the hole in the tub. Tighten loosely with a 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.

## **BASIC OPERATION**

### **SET UP INSTRUCTIONS**

	WHITES COLORS BRIGHTS
Evenor STAR	FABRIC SETTINGS

Shown is Model MHN30PD

This washer can hold up to an 18 lb (8.2 kg) load of laundry.

- 1. PD Models: Insert coins until "SELECT CYCLE" flashes in display.
- PR 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 or the wash cycle desired. After the cycle is started, the time will display and count down.
- 6. When a cycle is interrupted, "RESELECT CYCLE" will flash in the display. To restart the washer, press any button.

DEBIT CARD READY: This appliance is card reader ready. It will accept a variety of debit card systems, but does 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.

DISPLAY: 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 price. In washers set for free cycles, the display will flash "SELECT CYCLE". Otherwise the cycle price will be displayed in dollars and cents. If Super Cycle is enabled then the regular cycle price and the Super Cycle price will alternate on the display.

### AWARNING

#### 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 ground connection point or unpainted metal in the appliance.

#### -OR-

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

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

### GENERAL USER INFORMATION

Scrolling "out of order" message followed by a Failure Code:

This condition showing in the display indicates the washer is in an inoperative state and requires service. The failure code displayed is the best indication of the reason the washer has become inoperative.

'0 Minutes' showing in display:

This condition indicates the appliance 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 has failed, it must be replaced before normal operation can be restored.

Cold Start (initial first use):

Appliance is programmed at the factory as follows:

- 11 minute wash period
- 3 rinses (extra rinse not enabled)
- \$1.75 wash price (PD models)
- \$0.00 wash price (PR 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 the washer.

#### Door Lock

Door lock does a Child Safety Routine at start of every cycle. Child Safety Routine is: Lock, turn spin basket 1/2 revolution, Unlock, then Relock. The door will be locked when the cycle starts. 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 on the safety release tab.

(See page 4-17)



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







#### Pricing in the display

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**

This washer is debit card ready. It will accept a variety of debit card systems, but DOES 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, each debit pulse represents the equivalent of one coin (Coin 1).

#### Display

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 cycle price or amount of coins needed to start a cycle. If Super Cycle is enabled the Regular price and Super Cycle price will alternate in the display. In washers set for free vend, the display will flash 'SELECT CYCLE' rather than a cycle price.

During a cycle the display will show the approximate time remaining unless the washer is going through a "Suds Removal Routine." During the routine the display will alternate between the word "SudS" and the time remaining in the routine. At the end of the 5 minutes needed for this routine, the display returns to the same time displayed prior to entering it.

### **CONTROL SET-UP PROCEDURES**

**IMPORTANT:** Read all instructions before operating.

- PD Models: Use service key to remove service access door. Lifting the service access door engages the service switch.
- PR Models: Once a Generation 2 debit card reader is installed (according to the reader manufacturer's instructions), the set-up codes can be changed by inserting a manual set-up card (supplied by the reader manufacturer) into the card slot or by the use of a handheld device with DA communication and AccuTrac software. If a manual set-up card or a handheld AccuTrac device is not available, only diagnostic mode can be entered by removing the connector AA1 on the circuit board.
- PR Models set up as PNs : 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 set-up, 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 6 steps and some are timed. Using only the three bottom buttons (numbered 1, 2, and 3 from left to right):

- 1. Press 2 for longer than 2 seconds but less than 10 seconds.
- 2. Press 1 & 3 together for 2 seconds, then release. Displays S 3.
- 3. Press 1 & 2 together, then release. Displays S 4.
- 4. Press 2 & 3 together, then release. Displays S 5.
- 5. Press 2, then release. Displays "codE".
- 6. Wait at least 2 seconds, but not more than 15 seconds, then press in succession: 3, 2, 1, 3.

**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 the Service Mode when the Service Access code has been used to enter it:
- 1. From Set-up Code 8, press PERM. PRESS for 4 seconds.
- 2. Wait 2 minutes without touching any buttons (without diagnostic modes running).
- 3. Power down the washer, then reapply power.

### **REMOVE AA1 JUMPER**

#### PR Models Only:

**IMPORTANT:** Unplug washer or disconnect power before opening the console to access connector AA1:

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

The washer is now in the set-up mode. The lower fabric setting key pads and the digital display are used to set up the controls. The control can display 4 numbers and/or letters and a decimal point. These are used to indicate set-up codes and related code values available for use in programming the washer. How to use the key pad to program the controls

- The PERM. PRESS button is used to adjust the values associated with set-up codes. Pressing and releasing the button will change the value by increments. Rapid adjustment is possible by holding the button down.
- 2. The DELICATES AND KNITS button advances the display through the set-up codes. Pressing the 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 faster than 1 per second.
- 3. The QUICK CYCLE button is used to select or deselect options.

#### Start Operating Set-Up

Before proceeding, it is worth noting that, despite all of the options available, an owner can simply choose to uncrate a new commercial washer, add appropriate payment device or OPL Kit as needed and a service lock for PD models, plug it in, and have a washer that operates. Washers are preset at the factory for a 11-minute wash period and 3 rinses (no extra rinse).

### **SET-UP CODES**

- The DELICATES AND KNITS button will advance from code to code.
- The PERM. PRESS button will change the code value.
- The QUICK CYCLE button will select or deselect options.

FOR PR 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 default code for coin equipment.

CODE	EXPLANATION		
<u>6</u> 07	REGULAR CYCLE PRICE		
6 <u>07</u>	Represents the number of quarters (coin 1) needed to start the washer; may adjust from 0-39. (See VALUE OF COIN 1.) Advance from 0-39 by pressing the PERM. PRESS key pad. Factory default of 7 quarters = \$1.75.		
6,00,	PR MODELS ONLY: Factory default of 0 quarters (coin 1).		
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 th	$\rightarrow$ Press the DELICATES AND KNITS key pad once to advance to next code.		

CODE	EXPLANATION
7,11	WASH LENGTH
7.11.	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 PERM. PRESS key pad. Wash time does not include fill time.
→ Press th	e DELICATES AND KNITS key pad once to advance to next code.
800	ADDITIONAL RINSE OPTION This option is either SELECTED 'ON' or NOT SELECTED 'OFF'.
800	Not Selected 'OFF'.
BRr	Selected 'ON'. Cannot be combined with the Super Cycle rinse option.
	Press the QUICK CYCLE key pad once for this selection.
→ Press th	e DELICATES AND KNITS key pad once to advance to next code.
900	CYCLE COUNTER OPTION This option is either SELECTED 'ON' or NOT SELECTED 'OFF'.
900	Not Selected 'OFF'.
9 <u>0L</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 th	e DELICATES AND KNITS key pad once to advance to next code.
<u></u> 00	MONEY COUNTER OPTION This option is either SELECTED 'ON' or NOT SELECTED 'OFF'.
1.00	Not Selected 'OFF'.
1.0E	Selected 'ON'.
	Press the QUICK CYCLE key pad 3 consecutive times to select '0N' and 3 consecutive times to deselect (Not Selected '0FF'.) Counter resets by going from '0FF' to '0N'.
1. <u>E0</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 PERM. PRESS key pad once, and exit the set-up mode.
→ Press th	e DELICATES AND KNITS key pad once to advance to next code.
2.00	SPECIAL PRICING OPTION This option is either SELECTED '0N' or NOT SELECTED '0FF'.
2. <u>00</u>	Not Selected 'OFF', and next available code will be A.00.
2. <u>5P</u>	Selected 'ON'. Press the QUICK CYCLE key pad once for this selection.
If SPECIAL through '9	PRICING OPTION is selected, you have access to codes '3.XX' .XX'.
→ Press th	e DELICATES AND KNITS key pad once to advance to next code.
	OPTIONS TO USE IF SPECIAL PRICING IS SELECTED:
<u>3.07</u>	SPECIAL CYCLE PRICE
<u>Э.<u>0</u>7,</u>	Represents the number of quarters (coin 1) to start a cycle: may adjust from 0-39. (See VALUE OF COIN 1.) Advance from 0-39 by pressing the PERM. PRESS key pad. Factory default of 7 quarters = $1.75$ .
<i>3.<u>00</u></i>	PR MODELS ONLY: Factory default of 0 quarters.
→ Press th	e DELICATES AND KNITS key pad once to advance to next code.

CODE		EXPLANATION			
	OPTIONS TO	use if special pricing	IS SELECTED (cont.):		
5.00	TIME-OF-DA	Y CLOCK, MINUTE	S		
5.00	This is the TIME	-OF-DAY CLOCK, minute	setting; select 0-59 ev pad.		
→ Press th	ne DELICATES AND	KNITS key pad once to a	advance to next code.		
<u>.6</u> ,00	TIME-OF-DA	AY CLOCK, HOURS tary time or 24 hr. clock.			
<i>6.00</i> ,	This is the TIME by pressing the	-OF-DAY CLOCK, hour se PERM. PRESS key pad.	tting; select 0-23 hours		
→ Press th	The DELICATES AND KNITS key pad once to advance to next code.				
םם.ר	SPECIAL PR NOTE: Uses mil	RICE START HOUR itary time or 24 hr. clock.			
7. <u>00</u> ,	This is the start hour; 0-23 hours. Select START HOUR by pressing the PERM. PRESS key pad.				
→ Press th	ne delicates and	KNITS key pad once to a	advance to next code.		
. <u>8</u> .00	SPECIAL PR NOTE: Uses mil	RICE STOP HOUR itary time or 24 hr. clock.			
<i>8.00</i> ,	This is the stop the PERM. PRES	hour; 0-23 hours. Select SS key pad.	STOP HOUR by pressing		
→ Press th	ne DELICATES AND	KNITS key pad once to a	advance to next code.		
_ <u>9.</u> /0	SPECIAL PR	RICE DAY			
9.70	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 PERM. PRESS key pad.				
	When exiting set-up code '9', the display must show current day of week:				
	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 = Inursoay	55		
	70	Day 0 = Filuay Day 7 - Saturday	03 79		
→ Press th	ne DELICATES AND	KNITS key pad once to a	advance to next code.		
<u>A</u> .00	VAULT VIEW This option is eit	ING OPTION ther SELECTED 'ON' or N	ot selected 'off'.		
<i>R.DD</i>	Not Selected 'Of	Ŧ'.			
<i>R.<u>5</u>E</i>	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 th	e DELICATES AND	KNITS key pad once to a	advance to next code.		
<u>.5.</u> 05	VALUE OF C	OIN 1			
<i>Ь.<mark>05</mark></i>	This represents the value of coin 1 in number of nickels: $05 = \$0.25$ .				
	By pressing the PERM. PRESS key pad, you have the option of 1-199 nickels.				
	With coin slide a in nickels. Exam	activation, this represents ple: b.30 is equal to \$1.5	the total vend price 0.		
→ Press th	→ Press the DELICATES AND KNITS key pad once to advance to next code.				

CODE	EXPLANATION		
L.20	VALUE OF COIN 2		
<u> </u>	This represents the value of coin 2 in number of nickels: 20 = \$1.00.		
E.,05,	PR MODELS ONLY: Factory default of \$0.25.		
	By pressing the PERM. PRESS key pad, there is the option of 1-199 nickels.		
→ Press th	e DELICATES AND KNITS key pad once to advance to next code.		
_ <u>d.</u> 00	COIN SLIDE OPTION This option is either SELECTED '0N' or NOT SELECTED '0FF'. Replacement of meter case will be needed for coin slide mounting.		
d. <u>00</u>	Not Selected 'OFF'.		
<i>d.<u>E5</u>,</i>	<b>NOTE:</b> This option needs to be set to "00" unless the meter case has been changed to accept a coin slide device.		
	Selected 'ON'. Press the QUICK CYCLE key pad 3 consecutive times for this selection.		
	When coin slide mode is selected, set 'b.' equal to value of vend price in nickels. Set set-up code 6 xx (regular cycle price) and set-up code 3.xx (special cycle price) to number of slide operations. If the installer sets up 'CS' on a model with a coin drop, it will not register coins.		
→ Press th	e DELICATES AND KNITS key pad once to advance to next code.		
<u>E.</u> UU	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 dollars-and-cents amount.		
E.00	Not Selected 'OFF'.		
<i>E.<u>RC</u></i>	Selected 'ON'. Press the QUICK CYCLE key pad 3 consecutive times for this selection.		
→ Press th	e DELICATES AND KNITS key pad once to advance to next code.		
<u>F.</u> 00	ENHANCED PRICING OPTION		
F. <u>DD</u>	Not Selected 'OFF'.		
<i>F.<u>EP</u>.</i>	Cycle-Based pricing enabled. This option allows configuration of different prices for cold, warm, and hot water cycles.		
F. <u>5U</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 for this selection.		
→ Press th	e DELICATES AND KNITS key pad once to advance to next code.		
<u>H</u> .01	SUPER CYCLE UPGRADE PRICE (Skipped unless Super Cycle pricing is enabled.)		
Н. <u>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 PERM. PRESS key pad.		
→ Press th	e DELICATES AND KNITS key pad once to advance to next code.		
<u>h</u> .01	SUPER CYCLE TYPE (Skipped unless Super Cycle pricing is enabled.)		
h. <u>01</u> ,	This represents the Super Cycle upgrade option. Press the PERM. PRESS 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.		
US - both UT and UZ.			
→ Press th	IE DELIGATES AND KNITS KEY PAD ONCE TO Advance to next code.		

CODE	EXPLANATION	
JLd	COIN/DEBIT OPTION	
J.Ed	Both coin & debit selected.	
J.[	Coins selected, debit disabled. Press the QUICK CYCLE key pad 3 consecutive times to change this selection.	
J. <u></u> d	PR models factory default to Jd. Debit Card selected, coins disabled. Press the QUICK CYCLE key pad 3 consecutive times to change this selection.	
J.Ed.	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 th	e DELICATES AND KNITS key pad once to advance to next code.	
<u>L</u> .00	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.)	
L.00	Not Selected 'OFF'.	
L. <u>P5</u>	Selected 'ON'. Press the QUICK CYCLE key pad once for this selection.	
→ Press th	e DELICATES AND KNITS key pad once to advance to next code.	
<u>, , [</u> E	CLEAR ESCROW OPTION When selected, money held in escrow for 30 minutes without further escrow or cycle activity will be cleared.	
n.00	Not selected 'OFF'.	
n.[[E]	Selected 'ON'. Press the QUICK CYCLE key pad once to change this selection.	
→ Press th	e DELICATES AND KNITS key pad once to advance to next code.	
<u>r.</u> 800	TOP SPIN SPEED RPM	
r. <u>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 PERM. PRESS key pad. Factory default of 800 rpm.	
→ Press th	e DELICATES AND KNITS key pad once to advance to next code.	
<u>U.</u> 00	PENNY INCREMENT OFFSET	
U. <u>D 0</u> ,	This represents the penny increment price offset used in Generation 2 (Enhanced Debit) PR models. Choose from 0-4 pennies by pressing the PERM. PRESS key pad.	
→ Press th	e DELICATES AND KNITS key pad once to advance to next code.	
_ <u>RI_</u> 00	PREWASH LENGTH	
<i>RI.<u>DD</u></i>	This is the number of minutes of PREWASH. Choose 0 to disable the prewash or select between 2 and 7 minutes by pressing the PERM. PRESS key pad.	
→ Press th	e DELICATES AND KNITS key pad once to advance to next code.	
<u>HC.UJ</u>	FINAL SPIN LENGTH	
HC. <u>U3</u>	This is the number of minutes of final high speed spin. Choose from 3-8 minutes by pressing the PERM. PRESS key pad.	
→ Press the DELICATES AND 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	2 <u>25</u> = 25

TOTAL CYCLES = 225

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

If money counter (1.0C or 1.C0) is selected,

the following is true:

3 00	Dollars in Hundreds	3 <u>01</u> = \$	100.00
4 00	Dollars in Ones	4 <u>68</u> = \$	68.00
5 00	Number of Cents	5 <u>75</u> = \$	.75
		TOTAL = \$	168.75

END OF SET-UP PROCEDURES

EXIT FROM MANUAL SET-UP MODE

- PD Models: Reinstall service access door
- PR Models: Remove Smart Card
- PR Models without card reader installed:
  - → Unplug washer or disconnect power.
  - ➔ Open console, reinsert plug into AA1, close console.
  - → Plug in washer or reconnect power.
- PR Models set up as PN with programming switch: Turn key clockwise and remove.
- PR Models set up as PN without programming switch: Set-up mode can be exited by using procedures from Service Access Code (See page 3-4).

# **COMPONENT ACCESS**

### **COMPONENT LOCATIONS**

This section shows how to service each component within the Maytag Model 30 Commercial Front Loading Washer. The components and their locations are shown below.



#### CHEMICAL DISPENSER DRAWER AND PARTS

1. Pull the drawer out as far as it will go and press the release tab down in the top left rear corner with a flat blade screwdriver.



- 2. Pull the drawer out of the washer.
- 3. Lift the detergent cup insert out of the detergent drawer for cleaning.
- 4. Remove the locking tab by unclipping it from the slots in the top left rear corner. Replace it by clipping it into the slots.
- 5. Remove front decorative plate by removing four T-20 security sheet metal screws.

#### TECH TIP:

- The decorative front plate is secured with sheet metal screws. The facia is secured with machine screws. Do not interchange these screws.
- The front of the chemical dispenser drawer is called the handle, and it can come off if pulled on too hard. To reinstall the handle straighten the tabs, hook the top 3 tabs onto the drawer and rotate the front down to engage 3 tabs at the bottom.
- If softener fails to dispense properly or completely, remove the bottom cover of the dispenser assembly and make sure the siphon holes are clean.

#### REMOVE FACIA AND CONTROL PANEL COVER



- 1. Unplug washer or disconnect power.
- 2. Turn off the water supply to the washer.
- 3. Remove four T-20 security machine screws from the front of the facia.



- 4. Remove the chemical dispenser drawer from the washer.
- 5. Remove two T-20 security sheet metal screws, that were hidden by the chemical dispenser drawer, on the left end of the control panel.



### LIFT WASHER TOP

- 6. Pull the control panel cover, facia and display lens off the washer.
- 7. Depress the clips on the edges of the display lens on the back side of the control panel cover. Remove the display lens from the front of the cover.
- 8. On PR Models the card reader cover has two clips on the back side of the control panel cover that hold it in place. Depress the clips and remove the cover, along with the facia, from the front of the control panel cover.
- 9. Unclip the two clips from the back side of the facia and remove the card reader cover from the front of the facia.

**NOTE:** To avoid damage, lay a towel, or another covering, on the washer top and place removed hardware and tools on the covering.

#### TECH TIPS:

- Machine screws must be used for the facia, not sheet metal screws.
- In the opening for the card reader is the cable for a card reader that is now installed on the control board at the factory.
- There is a wire harness in the card reader opening that is connected to the edge of the UIC used in the manufacturing process only. It can be left in the control panel or removed if desired.

#### **AWARNING**



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



5. Lift the front edge of the washer top to open it. When it is open all the way it will rest on the 2 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 to leave in the upright position without using a support rod.

6. The top has 2 hinges, secured with star head screws, that are hidden once the top is closed.

### **REMOVE CONTROL PANEL**



- 1. Unplug washer or disconnect power.
- 2. Turn off the water supply to the washer.
- 3. Lift the washer top (See page 4-3).
- 4. Remove two T-20 1/4" hex head screws on each end that secure the control panel to the washer.



5. Lift the control panel up to release the two tabs from the top edge of the washer.



- 6. Rotate the control panel down to access the components located behind it.
- 7. Disconnect the power connector from the transformer at AA6 on the UIC, by depressing the tab and pulling the plug off of the connector.
- 8. Disconnect the wire harness from the CCU to the UIC by depressing the locking tab and pulling the Rast connector off of the control board edge.
- 9. Each Rast connector has keyed tabs on the top, which are located in different places on each connector to assist in proper placement of the connector during reassembly.
- 10. Disconnect the ground wire from the control panel by depressing the locking tab and pulling the connector off the spade which is secured to the control panel with a screw.
- 11. The control panel can now be removed from the washer.
- 12. The control panel has brass inserts in the screw holes 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.



**NOTE:** CCU to UIC cable can be connected to either of the top 2 connections on the UIC edge. (WB3 or WA3).

### **REMOVE USER INTERFACE CONTROL (UIC)**



- 1. Unplug washer or disconnect power.
- 2. Turn off the water supply to the washer.
- 3. Remove the control panel (See page 4-4).
- 4. Disconnect all of the wire connectors from the UIC.
- 5. Remove the key pad assembly ribbon connector by gently pulling it out of the connector GG5 on the board.
- 6. Remove the 2, number 1, star head screws from the left end and two 5/16" nuts from the right end of the UIC.

7. Squeeze the 2 tabs at the left end of the board together and lift the board up off the squeeze tabs. Remove the board by sliding it out of the control board edge connector mounting bracket.



### **REMOVE KEY PAD ASSEMBLY**



- 1. Unplug washer or disconnect power.
- 2. Turn off the water supply to the washer.
- 3. Remove the control panel (See page 4-4).
- 4. Remove two 5/16" hex head nuts from the right end of the UIC.



- 5. Gently pull the ribbon connector out of the connector GG5 on the UIC.
- 6. The extra length of plastic at the end of the ribbon connector must be bent back over the top of the end of the ribbon connector, not down and under or it will block the connections preventing operation. (See first picture in next column)



7. Press the end of the bolts down and remove the key pad assembly from the front side of the control panel.

**NOTE:** Key pad assemblies may look similar across Maytag product lines, but the hardware may be different and not interchangeable.

8. To remove the buttons from the subassembly, release the locking tab that holds each row of push buttons on the back side of the subassembly. The other end simply slides out of the slot in the metal backer plate.



9. The electronic membrane pad is glued to the metal plate of the subassembly and cannot be separated.

### **REMOVE CONTROL PANEL BRACKET**



- 1. Unplug washer or disconnect power.
- 2. Turn off the water supply to the washer.
- 3. Remove the control panel (See page 4-4).
- 4. Remove three 1/4" hex head screws at each end of the bracket.
- 5. Remove two T-20 screws from the control panel bracket that secure the front and top of the chemical dispenser.

**NOTE:** These screws have higher, wider spaced threads that are made for holding tightly to plastic. The head shape on these two screws is also different, a round flat top, for easy identification.



- 6. Disconnect the transformer primary wire harness connector from near the CCU.
- 7. Push the free end of wires from the control panel through the hole in the control panel bracket and remove the bracket.



### **REMOVE CENTRAL CONTROL UNIT (CCU)**



- 1. Unplug washer or disconnect power.
- 2. Turn off the water supply to the washer.
- 3. Lift the washer top (See page 4-3).
- 4. Remove two 1/4" hex screws to remove the cross brace below the top (See page 4-46).
- 5. Use a small flat blade screwdriver to press on the locking tab that secures each wire connector to the CCU, and remove the connectors.



6. With a small flat blade screwdriver, lift the locking tab that secures the CCU to the washer.

CCU Locking tab



Connection

Wire Clamps

7. Slide the CCU towards the back of the washer to release the tabs from the keyhole slots in the side panel of the washer and remove it.



#### **CCU CONNECTIONS**





#### **REMOVE WATER INLET VALVES**

Locking Tab



- 1. Unplug washer or disconnect power.
- 2. Turn off the water supply to the washer.
- 3. Remove the washer hoses from the hot and cold water inlet valves.
- 4. Lift the washer top (See page 4-3).



- 5. 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.
- 6. Loosen the clamp and disconnect the hose from each water inlet valve.



- 7. Remove the T-20 screw, on the back of the washer, that secures each water inlet valve.
- 8. From inside of the washer, twist the valve body to align the locking tabs with the cutouts in the back panel. Pull the valve out of the hole in the panel.



9. The screens inside the water inlet valve can be cleaned from the rear of the washer without removing the water inlet valve.

**NOTE:** (See page 4-35) for photos and for how to remove the water inlet valves from the back.
# **REMOVE PRESSURE SWITCH**



- The onping washer of disconnect power.
- 2. Turn off the water supply to the washer.
- 3. Lift the washer top (See page 4-3).



4. Disconnect the wire harness by pressing the locking tabs and pulling the wire harness off the pressure switch.

5. Rotate the pressure switch 45 degrees and pull the rectangular tab out of the slot in the top of the washer side panel.



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

**NOTE:** Hose should be snug to avoid air leaks.



# **REMOVE RFI LINE FILTER**



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



- 4. Remove the T-20 1/4" hex head screw. (See first picture in next column)
- 5. Slide the RFI line filter to the left to release the tabs in the slots.
- 6. Power goes into the RFI line filter through the black (hot) wire and white (neutral) wire connectors. Power goes out to the CCU through the pink wires.



- 7. Press The locking tab and remove the connector for the pink wires.
- 8. 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 from the RFI filters installed orientation.

To test for proper polarity, power must be reconnected to the washer, test between the white (neutral) wire connector and any chassis ground connection with a volt meter. If the polarity is correct there should be no voltage present. Disconnect the washer from the power before proceeding.

# **REMOVE POWER SUPPLY CORD**



- 1. Unplug washer or disconnect power.
- 2. Turn off the water supply to the washer.
- 3. Lift the washer top (See page 4-3).
- 4. Remove the screw from the green ground wire. (See first picture in next column)
- 5. Pull the connectors with white and black wires from the RFI line filter terminals.



- 6. Pull the washer away from the wall far enough to access the power supply cord on the rear panel.
- 7. Remove the one 1/4" hex head screw that secures the power supply cord strain relief to the rear panel of the washer.



8. Push the wire connectors out the rear panel of the washer.



# **REMOVE CHEMICAL DISPENSER ASSEMBLY**



- 1. Unplug washer or disconnect power.
- 2. Turn off the water supply to the washer.
- 3. Remove the control panel bracket (See page 4-7).
- 4. Remove two 1/4" hex screws to remove the cross brace below the top (See page 4-46).
- 5. Remove the hoses to the water inlet valves from the back of the chemical dispenser. Make note which hose is connected to which inlet.
- 6. There is a water metering insert in the end of this hose. Remove it, if necessary, by pulling it out of the end of the hose.



7. Slide the chemical dispenser toward the rear of the washer to release the tab that secures it to the left side panel.



8. Remove the clamp that secures the main water inlet tube to the bottom left front corner of the chemical dispenser and remove the hose. **REASSEMBLY NOTE:** When reconnecting

the main water inlet tube, align the arrow on the tube with the line on the chemical dispenser. Align the arrow on the flanged end of the tube with the arrow on the tub at approximately the 1:00 position.



### **REMOVE TRANSFORMER**



9. There are four tabs on each side of the chemical dispenser that secure the top of the dispenser to the 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.

Fabric Softener





- 1. Unplug washer or disconnect power.
- 2. Turn off the water supply to the washer.
- 3. Lift the washer top (See page 4-3).
- 4. The transformer for the UIC is attached to the control panel bracket, on the right end near the CCU.
- 5. Disconnect the wire harness connector from the transformer to the CCU and cut wire tie.
- 6. Remove two 1/4" hex head screws that secure the transformer to the control panel bracket and remove the transformer.



**NOTE:** Remove and replace rubber screw tip covers and wire tie when servicing transformer.

4-15

# **REMOVE DOOR LOCK / SWITCH ASSEMBLY**



- 1. Unplug washer or disconnect power.
- 2. Turn off the water supply to the washer.
- 3. Open the washer door.
- Remove two T-20 screws that secure the door lock assembly to the front panel of the washer.

**NOTE:** These screws are different than the other screws on the washer and need to be reinstalled to remount the lock assembly properly.



5. Use a small flat blade screwdriver in the loop at one end of the spring and pull to expand the spring and remove the retaining wire from the groove securing the bellow to the washer front panel.



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



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



8. Disconnect 4 wire connectors attached to the door lock assembly. The top connector has a locking tab to release and one of the connectors in the middle is a Rast connector with a locking tab to lift.

**NOTE:** In case of a power failure, the latch should unlock automatically after 2 minutes, but if not, the door can be opened manually by removing the lower service 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 will be able to 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.



- 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 scribe with a narrow 90 degree hook at one end, the latch can be pulled from the front to unlatch it.
- 4. Insert the hook of the scribe behind the latch hook and pull forward and down slightly to reset the latch hook to the unlatched position.

### **REMOVE DOOR HOOK**

- 1. Open the washer door.
- 2. Remove two T-20 screws that secure 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.

#### REMOVE DOOR AND HINGE ASSEMBLY

- 1. Open the washer door.
- 2. Remove two 1/4" hex head screws that secure 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.



This model front loading washer has a door hinge which allows the door to open a full 180 degrees and a slanted inner bowl glass which helps move the clothes to the back of the washer (shown in top picture above).

# 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.

**NOTE:** To avoid damage, lay a towel, or another covering, on the washer top and place removed hardware and tools on the covering.



- 2. To disassemble the door, remove eight T-20 screws from inside the door.
- 3. The 3 screws on the hinge side are not removed unless replacing the hinge.



 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 the 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 three T-20 machine screws that secure 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. To remove the bowl, remove the hinge and remove three 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 that secure the door halves together. 10. Support the inner door trim to avoid having it drop when removing the bowl brackets.







#### REMOVE LOWER SERVICE PANEL

11. 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.



12. 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.



- 1. Unplug washer or disconnect power.
- 2. Turn off the water supply to the washer.
- 3. Remove three 1/4" hex head screws under the lower service panel that secure the panel to the front of the washer.



4. Slide the lower service panel down and out to remove it from the washer.

**TECH TIP:** It may be easier to reinstall the lower service panel if the screws are partially installed first, then slide the lower service panel onto the screws and force the panel down and toward the washer to pop it into place. Secure the three screws tightly.

### **REMOVE DRAIN PUMP**



- 1. Unplug washer or disconnect power.
- 2. Turn off the water supply to the washer.
- 3. Remove the lower service panel (See page 4-21).



4. Place a towel or shallow pan below the pump to catch any water that may be left in the system.

5. Unscrew the pump filter and pull it out of the pump. If necessary, use a pair of pliers to loosen it.



6. Disconnect the pump-to-drain hose by squeezing the ears of the clamp and pulling the hose off.

**NOTE:** Take note of the notch on the hose and the locating notch on the pump that it aligns with.



**NOTE:** Pump to drain hose clamp may have a factory installed permanent squeeze clamp installed. If this is the case, the clamp must be pried off and replaced with a similar clamp which requires a special clamp tool. If this tool is not available a standard worm gear clamp is sufficient.

- 7. Lift the clip that holds the wires to the pump and slide the wires down to release them from the clip.
- 8. Flip open the lid that covers the wire connector to the pump motor. Pull the wire connector off to disconnect it from the pump.



- 9. 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.
- 10. Slide the pump to the right and then lift it from the base of the washer.



- 11. Disconnect the tub to pump hose by removing the clamp and pulling the hose off. **NOTE:** When reinstalling the tub to pump hose, align the arrow on the pump with the tab on the hose.
- 12. Remove the pump from the washer.
- NOTE: The 2 screws that secure the rubber mounting piece to the bottom of the pump support do not need to be removed to remove the pump assembly.
- NOTE: The filter has a large keyed shape on the top and a smaller shape on the bottom which fit into corresponding sized shapes in the filter housing to avoid improper filter orientation when it is reinstalled.





# **REMOVE DRAIN PUMP MOTOR**



- 1. Unplug washer or disconnect power.
- 2. Turn off the water supply to the washer.
- 3. Remove the drain pump (See page 4-22).
- 4. There may be 3 T-15 screws that secure the pump to the filter that must be removed.



5. There may be a locking tab that is located near the top of the pump. Use a flat blade screwdriver to press the tab in toward the motor while twisting the motor off the pump.



6. The pump assembly can be taken apart for cleaning. Use a flat blade screwdriver to lift the pump rotor out of the pump. The rotor has a magnetic attraction to the motor.



- NOTE: When reassembling the pump be sure the seal is clean of foreign debris and on the pump rotor before installing it into the pump.
- NOTE: Water may be found in the motor housing. This is normal and is used to help cool the motor.

# **REMOVE TUB TO PUMP HOSE**



- 1. Unplug washer or disconnect power.
- 2. Turn off the water supply to the washer.
- 3. Remove the lower service panel (See page 4-21).
- 4. Place a towel or shallow pan below the pump to catch any water that may be left in the system.
- 5. Unscrew the pump filter and pull it out of the pump. If necessary, use a pair of pliers to loosen it.



- 6. Remove the hose clamp from the pump and remove the hose.
- 7. Remove the pressure switch hose from the air trap which is connected to the tub to pump hose with a wire tie.

**NOTE:** When removing only the air hose from the tub to pump hose, avoid breaking the nipple of the fitting since it is a tight fit. Instead, cut off the wire tie that secures the fitting to the tub to pump hose, and remove the fitting with the air hose. The wire tie will need to be replaced if this is the procedure used.

8. Remove the hose clamp from the tub and remove the tub-to-pump hose.



# **REMOVE GROUND SWITCH**

- When reinstalling the tub to pump hose, align the air hose fitting with the opening at the right side of the tub opening flange.
- There is also an alignment arrow on the pump that should be aligned with the notch on the hose.



# 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 lower service panel (See page 4-21) or Remove the rear panel (See page 4-28).



Front Ground Switch

4. Use a flat blade screwdriver to press in on the 2 locking tabs in the bottom slots to release the switch.



- 5. Slide the switch up and pull it out of the slots to remove it.
- 6. Remove the 2 wires from the clips on each side of the ground switch and pull the connectors off the spade terminals.



7. Push out on the 2 tabs of the switch holder, rotate the switch in the direction of the arrow, and remove the switch from the holder.



Ground Switch

# **REMOVE REAR PANEL**



- 1. Unplug washer or disconnect power.
- 2. Turn off the water supply to the washer.
- 3. If they were Installed, remove the 4 plastic shipping bolt hole covers by lifting the rounded end to unhook the locking tab from the slot in the chassis and slide the cover toward the nearest side panel to release and remove the covers.

- 4. Remove the 14 hex head screws that secure the rear panel to the washer.
- 5. Pull the bottom edge out and slide the panel down from behind the lip at the top edge to remove the panel.



# **REMOVE MOTOR CONTROL UNIT (MCU)**



- 1. Unplug washer or disconnect power.
- 2. Turn off the water supply to the washer.
- 3. Remove the lower service panel (See page 4-21)



4. Disconnect the 4 wire connectors from the MCU.



- 5. Cut the wire ties from the side of the MCU. Make sure not to cut the plastic base clip the wire tie secures to. Remove the base clips and install them on the replacement MCU. New wire ties will be provided with a replacement MCU but not new base clips. Use a flat blade screwdriver to lift the locking tab that secures the MCU to the base of the washer.
- 6. Slide the MCU back to release the tabs from the keyhole slots in the base of the washer.



- 7. Lift the MCU out of the washer.
- NOTE: Replacement wire ties are supplied with the new MCU. It is necessary to replace cut, broken or damaged wire ties.

# **REMOVE TEMPERATURE SENSOR**



- 1. Unplug washer or disconnect power.
- 2. Turn off the water supply to the washer.
- 3. Remove the rear panel (See page 4-28).



- 4. Press the locking tab and remove the wire connector from the sensor.
- 5. Pull the temperature sensor out of the tub with a slight twisting motion.



- 6. Remove and replace the grommet only if necessary.
- It is easier to reinstall the grommet when separated from the sensor first.
- It may help to wet the temperature sensor when reinstalling it since it is a tight fit in the rubber grommet.

# **REMOVE DRIVE BELT**



- 1. Unplug washer or disconnect power.
- 2. Turn off the water supply to the washer.
- 3. Remove the rear panel (See page 4-28).
- 4. Turn the basket pulley with one hand and guide the belt off the basket pulley with the other.



**NOTE:** Both rear braces have been removed for visual clarity, they do not need to be removed to remove the belt. If they are removed for any purpose, do not move or lean on the washer or the side panels will be damaged.



- The drive belt is a ribbed, fiber reinforced belt.
- Make sure that the belt rides entirely in the grooves of the pulley and not on the front or back of the pulley where there are no grooves.

# **REMOVE MOTOR**



- 1. Unplug washer or disconnect power.
- 2. Turn off the water supply to the washer.
- 3. Remove the drive belt (See page 4-31).
- 4. Disconnect the motor wire harness plug coming from the motor.
- 5. Lift the two locking tabs to release the wire harness.
- 6. Disconnect the ground wire by pulling it off of the connector.

- 7. Disconnect the spade connector by pressing on the locking tab and pulling the connector off the spade connector.
- 8. Squeeze the Christmas tree clip that holds the wire harness to remove it from the hole in the motor wire harness bracket, if removing the motor completely.



9. Remove the 1/2" bolt securing the motor to the tub.



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

# **REMOVE BASKET PULLEY**



- 1. Unplug washer or disconnect power.
- 2. Turn off the water supply to the washer.
- 3. Remove the drive belt (See page 4-31).



- 4. Block the pulley to the rear of the tub to keep the spin basket from moving.
- 5. Remove the 15/16" nut securing the pulley to the spin basket.



6. Pull the pulley off the shaft.



**NOTE:** When reinstalling the 15/16" nut make sure it is tightened to between 50-60 foot pounds. If not tightened sufficiently the washer may produce knocking noises that sound like a failed bearing.

# **REMOVE AIR GAP DAMPER**



- 1. Unplug washer or disconnect power.
- 2. Turn off the water supply to the washer.
- 3. Remove the lower service panel (See page 4-21) or Remove the rear panel (See page 4-28).
- 4. 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.
- 5. Reach around to the other side and release the other locking tab.
- 6. Turn the upper half of the damper body 90 degrees and pull the tab out of the slot in the tub.



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



8. 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 moulded stop that will keep the damper from rotating in the wrong direction.

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

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



### **REMOVE VENT TUBE**

# 

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 rear panel (See page 4-28).
- 4. Remove the clamp that secures the vent tube to the back of the tub and remove the tube.



#### **REMOVE WATER INLET** VALVE - FROM THE BACK

# AWARNING



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 rear panel (See page 4-28).
- 4. Remove the T-20 screw, on the back of the washer, that secures each water inlet valve.
- 5. From inside of the washer, twist the valve body to align the locking tabs with the cutouts in the back panel. Pull the valve out of the hole in the panel.
- 6. Lower the valve to gain access to the hose clamps and Rast connectors.
- 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 4-10) for photos and for how to remove the water inlet valves from the top.

# **REMOVE FRONT PANEL**



- 1. Unplug washer or disconnect power.
- 2. Turn off the water supply to the washer.
- 3. Remove the door lock assembly. (See page 4-16).
- 4. Remove the control panel cover. (See page 4-2).
- 5. Remove the lower service panel (See page 4-21).
- 6. Remove two 1/4 inch hex head screws, that were hidden by the lower service panel, that secure the bottom of the front panel to the washer side panels.



Two 1/4" Hex Head Screws

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



If not removed earlier, the door lock assembly is attached to the inside of the front panel. Disconnect the wire connectors to the door lock assembly to be able to remove the front panel completely.



# **REMOVE THE BELLOW**



- 1. Unplug washer or disconnect power.
- 2. Turn off the water supply to the washer.
- 3. Remove the front panel (See page 4-36).
- 4. Loosen the star head screw on the clamp securing the rear of the bellow to the outer tub.



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



6. Roll the bellow off the flange of the outer tub to remove it.



# **REMOVE A PEDESTAL**

- NOTE: When reinstalling the bellow it is important to position the weep holes at the bottom center of the cabinet opening.
- Removal of the front weights will make it much easier to reinstall the bellow.
- If there is a complaint that water rolls out the door when the clothes are removed from the washer, adjust the front leveling legs slightly lower to raise the front of the washer up slightly and allow pooled water to flow back into the washer.



- If reinstalling the tub into the washer, reinstalling the bellow on the outer tub is done before reinstalling the front weights.
- When reinstalling the bellow clamps, make sure the bellow is not twisted, causing it to distort, which may cause vibrations in spin.

- 1. Disconnect all hoses from the back of the washer,
- 2. Disconnect the power cord.
- 3. Lay the washer on its back. If the shipping bolts have been removed be aware that the tub assembly will be loose and will move toward the back when the washer is tipped backwards, stretching the boot.
- 4. Loosen the two top 5/16" hex head screws that secure the pedestal to the base of the washer.
- 5. Remove the two bottom 5/16" hex head screws.



- 6. Lift the pedestal up off the top two screws to remove it.
- 7. Remove the legs by unscrewing them from the rivet nuts in the four corners of the pedestal.
- 8. When installing a pedestal on the washer, loosely install the bottom two 5/16" hex head screws in the base of the washer. Set the pedestal onto the screws and install the top two 5/16" hex head screws. Tighten all the screws securely.

**NOTE:** If the rivet nuts become loose the washer will not be able to be secured properly and may vibrate and or shake during operation. If this happens replace the pedestal.

# **REMOVE TUB AND SPIN BASKET ASSEMBLY**



- 1. Unplug washer or disconnect power.
- 2. Turn off the water supply to the washer.
- 3. Remove the chemical dispenser assembly (See page 4-14).
- 4. Remove the rear panel (See page 4-28).
- 5. Remove the front panel (See page 4-36).
- 6. Remove the flanged end of the main water inlet tube by working the flange out of the hole in the tub.



**NOTE:** When reassembling the main water inlet tube, orient the arrow on the tube toward the arrow on the tub.

- 7. Remove the bellow (See page 4-37).
- 8. Remove the tub to pump hose (See page 4-25).
- 9. Remove the drive belt (See page 4-31).
- 10. Remove the motor (See page 4-32).
- 11. Remove the wiring connector from the temperature sensor.
- 12. Disconnect the ground wire to the hub at the spade connection about 12 inches from the hub. Follow the ground wire from the hub to the connector to locate the disconnecting point.



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



- 14. Remove the vent tube (See page 4-35).
- 15. Remove three 1/2" bolts that secure the lower front weight to the outer tub, and remove the weight.
- 16. Remove three 1/2" bolts that secure the top rear weight to the outer tub, and remove the weight.



17. Remove three 1/2" bolts that secure the upper front weight to the outer tub, and remove the weight.

**NOTE:** When reinstalling the bolts for the weights make sure they are secured to between 14 and 16 foot pounds of torque.

18. 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 the tub drop free inside the cabinet.

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



20. If replacing the tub, remove the six flat nuts that secure the weights to the tub by prying them out of their slots with a flat blade screwdriver. Flat nuts are usually not supplied with a replacement tub.

**NOTE:** Install the flat nuts by inserting a nut into each slot and tapping them into place.

21. Mark the tub where the clamp is attached with the pressure hose tied to it.



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



- 23. Press the tab on 2 of the 3 guides around the edge of the tub to release the tub halves. The 3 guides will assist in realigning the tub halves during reassembly.
- 24. Once the halves have been separated the spin basket can be pulled from the rear outer tub half.



25. The bearings and seals are located in the rear half of the outer tub.

26. The gasket that seals the two tub halves together can be removed and replaced in the channel around the edge of the rear outer tub. This gasket should be replaced after separating the outer tub.



27. When replacing the metal clips, place them at each location of 2 raised indicators.



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

# **REPLACE BAFFLE**



- 1. Unplug washer or disconnect power.
- 2. Turn off the water supply to the washer.
- 3. Remove the tub and spin basket assembly (See page 4-39).
- 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 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 center 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



# **REMOVE METERCASE (MODEL MHN30PD)**



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



- 4. Remove the service access door.
- 5. Remove two 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 12-15 foot pounds.

**NOTE:** In cases where the coin box does not fit snug in the coin vault, it can add to the noise of a vibrating and shaking metercase assembly. Two foam pads can be installed on the front sides inside the coin vault. They will serve to snug the coin box within the coin vault.



# **REMOVE COIN DROP (MODEL MHN30PD)**



- 1. Unplug washer or disconnect power.
- 2. Remove the service access door from the metercase.
- 3. Remove 2 security bolts that secure the coin drop from inside the service access area using a 1/4" ratchet and a ratchet.





4. Disconnect the wire harness connector 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 a D5 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

# **REMOVE COIN VAULT SWITCH (MODEL MHN30PD)**



- 1. Unplug washer or disconnect power.
- 2. Remove the service access door from the metercase.
- 3. Remove the coin box.
- 4. Disconnect the wire harness connector from the switch in the service access area.



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.



#### REMOVE SERVICE SWITCH (MODEL MHN30PD)



- 1. Unplug washer or disconnect power.
- 2. Remove the service access door from the metercase.
- 3. Remove one 5/16" hex head screw to release the bracket that holds the service switch.



4. Remove the switch, bracket and wire harness.

#### MAIN TOP SUPPORT

# **AWARNING**



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. Lift the washer top (See page 4-3).

**NOTE:** There are two parts that make up the top support. The angle support is glued to the underside of the top. The cross brace is attached to the side panels with a 1/4" hex screw at each end. It has 3 foam pads glued onto it. When the top is closed, the angle support presses into the glued on foam pads of the cross brace to help reduce vibration of the top and / or metercase.


# **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, looking for broken or loose wires, failed terminals, or wires not pressed into 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).



## AWARNING

#### **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.



See page 4-10 for the procedure for accessing the water inlet valves.

To check the inlet valve solenoids at the component terminals, perform the following steps:

- 1. Unplug washer or disconnect power.
- 2. Disconnect the solenoid connectors from the inlet valve terminals.
- 3. Set the ohmmeter to the R X 100 scale.
- 4. Touch the ohmmeter test leads to any of the cold or hot water connector terminals. The meter should indicate  $1,000 \pm 50$  ohms on either coil.

## **INLET VALVE SOLENOIDS**

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

- 1. Unplug washer of disconnect power.
- 2. Disconnect the inlet valve solenoid connector DI6 and VCH7 (See page 4-9) 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  $1,000 \pm 50$  ohms.
- VCH7 Connector Pins 1 & 3 (cold #2) Pins 5 & 7 (cold #3)
- DI6 Connector Pins 1 & 3 (hot #1)





**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 SWITCH**

See page 4-11 for the procedure for accessing the pressure switch.

To check the pressure switch at the component terminals, perform the following steps.

- 1. Unplug washer or disconnect power.
- 2. Disconnect the wire connector and hose from the pressure switch.
- 3. Set the ohmmeter to the R X 1 scale.
- 4. Touch ohm meter leads to terminals 21 & 22, continuity will be read without water in the washer. As water enters the washer the next switch to close is Suds Level and continuity is read between terminals 11 & 14. The next switch to close is the Wash Level read at terminals 21 & 24. Finally if water were to rise high enough, the Overflow Switch would close between terminals 21 & 26.





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

- 1. Unplug washer or disconnect power.
- 2. Disconnect pressure switch connector PR6 from the CCU (See page 4-9).
- 3. Set the ohmmeter to the R X 1 scale.
- 4. Touch the ohmmeter test leads to connector pins 4 and 6. The meter should indicate continuity.



Connector PR6 at CCU

Water level setting	Test points
Less than 1 liter	Pins 4 and 6
Suds Level > 3.6 liters	Pins 1 and 2
Wash Level > 5.4 liters	Pins 4 and 5
Overflow, about 54 liters	Pins 3 and 4

5-2



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.

## **RFI LINE FILTER**



See page 4-12 for the procedure for accessing 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.
- Touch the ohmmeter test leads to the following connector pins (shown above). The meter should indicate 0 ohms 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 (See page 4-9) 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 30 ohms.



Connector IF2 At CCU



**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 4-16 for the procedure for accessing 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 (See page 4-9) 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 on connector DL3. The meter should indicate as follows:

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

- 5. Disconnect the door switch connector (See page 4-9) 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 (0  $\Omega$ ) Door open = open circuit (infinite  $\Omega$ )



- 7. To test the Wax Motor perform the following steps.
  - 1. Unplug washer or disconnect power.
  - 2. Remove the latch assembly.

3. Disconnect the connector from Wax Motor.

4. Touch the ohm meter test leads to the wax motor terminals. Reading should be approximately 1.3K ohms.

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 ohms.



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**



Drain Pump Connector

See page 4-24 for the procedure for accessing 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 12.3 ohms.

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 (See page 4-9) 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. The meter should indicate 12.3 ohms.



Connector DP2 At CCU



**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 4-30 for the procedure for accessing 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
32°F (0°C)	35.9k Ω
86°F (30°C)	9.7k Ω
104°F (40°C)	6.6k Ω
122°F (50°C)	4.6k Ω
140°F (60°C)	3.2k Ω
158°F (70°C)	2.3k Ω
203°F (95°C)	1k Ω

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 (See page 4-9) 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



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 4-32 for the procedure for accessing the drive motor.

- 1. Unplug washer of 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  $6 \Omega$ .

Pins 1 and 2 Pins 2 and 3 Pins 1 and 3

#### **GROUND SWITCH**



See page 4-26 for the procedure for accessing a ground switch.

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



**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 MEMBRANE SWITCH

See page 4-6 for the procedure for accessing the key pad 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 contacts listed. Press the button listed for each pair of contacts. The meter should indicate continuity (0  $\Omega$ ). If the meter indicates an open circuit (infinite  $\Omega$ ), replace the membrane switch.

6 Button User Interface Membrane Switch

Contact	Contact	Button
4	5	А
2	5	В
3	5	С
4	1	D
2	1	E
3	1	F





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.

## **COIN DROP ACCEPTOR**

The coin drop acceptor is used only on the PD model washers. 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 by removing the 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 rear) to accept proper diameter coins, yet reject oversized coins. Adjust the front and rear pins in the guide rail to just miss the quarter and tighten the front guide rail screws.



**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.
- 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	30 - 35 Ω
Blue to Blue	1 Ω
White to White	2 Ω
Yellow to Blue	0.5 Ω



**NOTE:** For visual clarity, the control panel bracket in this photo has been removed from the washer and tipped to show the transformer. The control panel bracket does not need to be removed to remove the transformer.

# **DIAGNOSIS & TROUBLESHOOTING**

Before servicing, check the following:

- Make sure there is power at the wall outlet and that the polarity is correct.
- 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: Look at top of connector. Check for broken or loose wires. Check for wires not pressed into connector far enough to engage metal barbs.
- Resistance checks must be made with power cord unplugged from outlet, and with wiring harness or connectors disconnected.

#### WASHER DIAGNOSTIC MODE

To enter the 'Washer Diagnostic Mode,' first enter 'Start Operating Set-Up.' Then press and hold the QUICK CYCLE button for 1 second while in set-up code six, anytime a diagnostic code is present, or while dAS displays if operating with Maytag Data Acquisition set-up.

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 BRIGHTS button. Use the Washer Cleanout Cycle once a month to keep the inside of your washer fresh and clean. This cycle uses a higher water level. Use with liquid chlorine bleach to thoroughly clean the inside of your 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 wash drum.
- 2. Cycle Credit With the entire display flashing, a cycle may be credited by pressing the PERM. PRESS 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 Cycle 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 switch behavior.
- 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 Cycle With the entire display flashing, this cycle is started by pressing the DELICATES AND 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.

### FAILURE / ERROR DISPLAY CODES

ACCU TRAC® INDICATION	WASHER DISPLAY	EXPLANATION AND RECOMMENDED PROCEDURE
dБ	FDI	CCU ERROR
		Communication error within the Central Control Unit (CCU); the pump drive in CCU fails to activate; one of the main relays in the CCU fails to activate.
		Possible Causes
		<ul> <li>A power surge/grop.</li> <li>Reversed polarity or mis-wire, along with open ground switches.</li> </ul>
		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.
		Mis-wire or reversed polarity procedure 1. Clear error code.
		<ol> <li>Check the white wire on the RFI filter to ensure correct polarity. White wire needs to be toward front of washer.</li> </ol>
		<ol> <li>Check outlet for correct polarity. To check within washer for polarity at the RFI, white to cabinet ground must be 0 volts.</li> </ol>
		<ol><li>Check that the ground switches of the toe panel and rear panel are correctly closed.</li></ol>
		5. Verify CCU by running a short diagnostic test.
		If these procedures do not correct the failure, replace the CCU control.
d//	FII	MCU ERROR
		Motor Control Unit (MCU) has a failure.
		<ul> <li>Possible Causes</li> <li>A repeating under or overvoltage condition. If the failure occurs during a high-speed spin, the door remains locked for 2 minutes.</li> </ul>
		<ul> <li>Procedure <ol> <li>Clear error code.</li> <li>Unplug the washer or disconnect power.</li> <li>Using Ohm meter, check wire harness connections for continuity between drive motor and the MCU.</li> <li>Check the motor and do a continuity test.</li> <li>The MCU is good if the motor operates in diagnostic mode.</li> </ol> </li> <li>If the motor fails to turn on, replace the MCU.</li> </ul>

**Video Note:** Prior to the F20 failure code being displayed the washer will make two additional attempts to fill with water. During each attempt "Io H20" is scrolling with "RESELECT CYCLE" flashing on display. If no water enters the washer the entire process takes about 7 minutes prior to the failure code being displayed.

ACCU TRAC®	WASHER	
INDICATION	DISPLAY	EXPLANATION AND RECOMMENDED PROCEDURE
d 7	F 20	NO WATER DETECTED ENTERING WASHER
Video	Note:	The first level of pressure switch is not tripped after 6 minutes and/or the second level of pressure switch is never reached. <b>NOTE:</b> The message "lo H20" will appear before the F20 error is displayed, and the washer may try 3 times before the failure code is activated.
THIS	page	<ul> <li>Possible Causes <ul> <li>No water to washer; faucet(s) turned off.</li> <li>Defective hot and/or cold valve(s).</li> <li>Plugged or kinked inlet hoses or valves.</li> <li>Pressure switch or pressure switch hose damaged, kinked, or disconnected.</li> <li>Electrical connection from CCU (PR6) to pressure switch damaged.</li> <li>Blocked inlet from dispenser to tub.</li> </ul> </li> </ul>
		<ol> <li>Procedure         <ol> <li>Clear error code.</li> <li>Unplug washer or disconnect power.</li> <li>Check incoming water pressure at faucet.</li> <li>Check inlet hoses for possible leaks.</li> <li>Make sure pressure switch hose is in good condition and properly connected to tub and pressure switch.</li> <li>Check that there is not a drain siphon problem.</li> <li>Perform continuity test on wire harness connections from CCU to inlet valves (VCH7), pressure switch (PR6), and drain pump (DP2).</li> <li>Check that the pump is not running while the washer is filling.</li> <li>Verify pressure switch operation by accessing Help Mode while running a paid cycle.</li> </ol> </li> </ol>
d R	F 7 !	LONG DRAIN
		The drain time exceeds 8 minutes without reaching reset level in pressure switch. <b>NOTE:</b> 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).
		<ul> <li>Possible Causes</li> <li>Damaged or blocked pump.</li> <li>Drain hose blocked or exceeds recommended height.</li> <li>Poor connection between CCU (DP2) and drain pump.</li> </ul>
		<ul> <li>Procedure <ol> <li>Clear error code.</li> <li>Unplug washer or disconnect power.</li> </ol> </li> <li>Make sure the drain hose is not sealed in the standpipe.</li> <li>Ensure the drain height is not more than 8 ft above the base of the washer.</li> <li>Check the drain hose and make sure it is not plugged or kinked.</li> <li>Check the drain pump for foreign objects.</li> <li>Check the electrical connection between the pump and the CCU (DP2).</li> <li>Check the pump using a diagnostic mode.</li> <li>If all the above are OK and pump is powered but does</li> </ul>

ACCU TRAC <sup>®</sup> INDICATION	WASHER DISPLAY	EXPLANATION AND RECOMMENDED PROCEDURE
d / 7	<i>ج</i> ج ۲	DOOR LOCK ERROR
Video This	Note: page	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.
		Possible Causes - Misaligned or broken door latch Electrical connections from CCU (DLS2, DL3) to door lock are damaged Misaligned broken or overtightened door book
		Procedure
		1. Clear error code.
		2. Unplug the washer or disconnect power.
		3. Ensure 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.
		If the latch fails to lock after checking all of the above, replace the latch.
dгч	FZY	TEMPERATURE SENSOR ERROR
		Water temperature sensor value is out of range (23°F to 217°F [-5°C to 103°C])
		<b>NOTE:</b> To find correct Ohm reading, refer to the Water Temperature Sensor section.
		<ul> <li>Possible Causes</li> <li>Water temperature sensor damaged.</li> <li>Electrical connections from CCU (TH2) to temperature sensor damaged.</li> </ul>
		Procedure
		1. Clear error code.
		<ol> <li>Onput the washer of disconnect power.</li> <li>Perform Ohm test on Water Temperature Sensor and harness connection. This reading can be taken from the cable attached to CCU terminal TH2.</li> <li>If the water temperature sensor is out of range, renlace it</li> </ol>

Video Note: To simulate the F22 failure we are showing the door open and the door switch manually held closed, which is treated the same by the washer as if the door were closed and the latch was unable to lock. The latch will make 6 attempts to lock, then the display changes and alternates between the words "oPEn" and "door." It is assumed that the customer will open the door, clear obstruction, and shut door. Display will change and flash "RESELECT CYCLE." Washer will try twice or 12 attempts to lock the door before cancelling the cycle. Money is held in escrow. The next time the same washer is started the washer will run the same routine, if the door locks, the cycle runs normally, if not, F22 is displayed and money is lost.

ACCU TRAC®	WASHER	
INDICATION	DISPLAY	EXPLANATION AND RECOMMENDED PROCEDURE
dla	FZS	TACHOMETER ERROR
u / 2	,	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.
		Possible Causes – Damaged or poor contact in electrical connection from MCU to drive motor.
		<ul> <li>Inverted wires on RFI while ground switch(es) open.</li> </ul>
		Procedure for damaged MCU connection 1. Clear error code.
		2. Unplug the washer or disconnect power.
		3. Check for broken belt.
		<ol> <li>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.</li> </ol>
		<ol> <li>Verify electrical connection between MCU and drive motor connector.</li> </ol>
		6. Reassemble any disassembled parts.
		7. Reconnect to power.
		<ol> <li>Check operation of drive motor in diagnostic mode; if drum tumbles, the MCU and motor are OK.</li> </ol>
		Procedure for inverted wires on RFI 1. Clear error code.
		<ol> <li>Unplug the washer or disconnect power.</li> <li>Look for reversed polarity at RFI filter.</li> </ol>
		4. Make sure that the ground switches of the toe panel or rear panel are closed and working correctly.
		<ol><li>Check operation of drive motor in diagnostic mode; if drum tumbles, the motor is OK.</li></ol>
		If, after these procedures, the drum fails to tumble, replace the MCU. If motor operation is not restored, replace the motor.
dЧ	F 2 6	DOOR SWITCH ERROR
		The door switch circuit is open for 5 seconds while the door is locked.
		Possible Causes – Electrical connections from CCU (DLS2) to door switch in latch are damaged.
		Procedure 1. Clear error code.
		<ol> <li>Unplug the washer or disconnect power.</li> <li>Verify the electrical connection between CCU and door switch by using the Help Mode or continuity test at CCU (DLS2) connection.</li> </ol>
		If the door switch circuit fails to open or close, replace

ACCU TRAC® INDICATION	WASHER DISPLAY	EXPLANATION AND RECOMMENDED PROCEDURE
d 21	F27	OVERFLOW CONDITIONS
		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.
		Possible Causes – Inlet valve(s) unable to close.
		<ul> <li>Pressure switch hose is kinked.</li> </ul>
		Procedure 1. Clear error code.
		2. Unplug the washer or disconnect power.
		<ol> <li>Remove electrical connections for cold and hot inlet valves. If water continues to flow into washer, inlet valve needs to be replaced.</li> </ol>
		4. Check if pressure switch hose is kinked.
		<ol> <li>Verify functionality of inlet valves by running a diagnostic cycle.</li> </ol>
d 20	F 28	COMMUNICATION FAILURE BETWEEN CCU AND MCU
		The communication between the Central Control Unit (CCU) and the Motor Control Unit (MCU) has failed.
		Possible Causes <ul> <li>Reversed polarity or mis-wire along with open ground switch(es).</li> </ul>
		<ul> <li>Communication cable from CCU (MI3) to MCU is damaged.</li> </ul>
		Procedure for reversed polarity or mis-wire 1. Clear error code.
		2. Unplug washer or disconnect power.
		<ol> <li>Check the white wire on the RFI filter to ensure correct polarity. White wire needs to be toward front of washer.</li> </ol>
		4. Check outlet for correct polarity.
		<ol> <li>Check that the ground switches of the toe panel and rear panel are correctly closed. Refer to Grounding System Wiring Diagram.</li> </ol>
		Procedure for communication cable 1. Clear error code.
		2. Unplug the washer or disconnect power.
		<ol> <li>Perform continuity test on wire harness connections from CCU (MI3) to MCU (be careful not to spread the Rast connector ends).</li> </ol>
		4. Verify the drive motor operation in diagnostic mode. If drum fails to tumble, replace the MCU.

ACCU TRAC <sup>®</sup> Indication	WASHER Display	EXPLANATION AND RECOMMENDED PROCEDURE
d/9	F 29	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.
		<ul> <li>Misaligned, broken, or overtightened door hook.</li> </ul>
		Procedure
		1. Clear error code.
		2. Onplug the washer of disconnect power.
		4 Ensure that the latch is secured to the front nanel
		<ol> <li>5. Check for misaligned, broken, cracked, or loose door hook.</li> </ol>
		<ol> <li>Check the electrical connections between CCU (DLS2, DL3) and latch.</li> </ol>
		If the latch fails to unlock after checking all of the above, replace the latch.
d / 🛛	F 31	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
		<ul> <li>Improper installation of washer.</li> </ul>
		<ul> <li>Poor electrical connection from CCU (MS2) to MCU.</li> </ul>
		Procedure 1. Clear error code.
		2. Unplug the washer or disconnect power.
		<ol> <li>Verify the washer is not located near a source of heat and has proper ventilation.</li> </ol>
		<ol> <li>Check the electrical connections between CCU (MS2) and MCU.</li> </ol>
		5. Verify the drive motor operation in diagnostic mode.
		If, after the above tests, the motor overheats, replace the MCU.

ACCU		
TRAC <sup>®</sup> Indication	WASHER DISPLAY	EXPLANATION AND RECOMMENDED PROCEDURE
d / 4	F 33	PUMP DISCONNECTED
		The electrical connection between the pump and the CCU is lost.
		Possible Causes – Poor connection between CCU (DP2) and drain pump.
		<ul> <li>Pump thermal overload caused by the pump running for an extended period of time.</li> </ul>
		Procedure 1. Clear error code.
		2. Unplug the washer or disconnect power.
		3. Check electrical connection between pump and CCU (DP2).
		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.
d15	F 34	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.
		<ul> <li>Friction between the drum and bellows material.</li> </ul>
		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.
d 23	F 70	COMMUNICATION FAILURE BETWEEN CCU AND UI
		Communication between Central Control Unit (CCU) and User Interface (UI) has failed.
		Possible Causes – Electrical connection between CCU and UI is damaged.
		Procedure 1. Clear error code.
		2. Unplug the washer or disconnect power.
		3. Verify that the communication cable is connected
		4. Verify continuity in the cable between the CCU
		If, after these procedures, the continuity test fails, replace the communication cable. If F70 is still
		present, replace the UI control.

ACCU TRAC® Indication	WASHER DISPLAY	EXPLANATION AND RECOMMENDED PROCEDURE
d 3	F 7 3	UI FAILURE
	F74	Communication error within the User Interface.
		Possible Causes
		– A power surge/drop.
		1. Clear error code.
		2. Unplug the washer or disconnect power.
		3. Wait 2 minutes before reconnecting power.
		<ol> <li>Verify UI by attempting to start a cycle or run diagnostic mode.</li> </ol>
		If these procedures do not correct the failure, replace the UI control.
d 5	d 5	COIN 1 ERROR
		The Coin 1 sensor is detected as blocked for 8 seconds.
		Possible Causes
		- Colli Vauli full of money. - Blocked or dirty sensor
		Procedure
		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.
		<ol> <li>Check the wire harness connections between User Interface (AA4) and the coin sensor switch to ensure wires do not block the coin switch beam.</li> </ol>
		<ol><li>Shorting the connections 2 and 3 at AA4 on UI will simulate a good coin sensor.</li></ol>
		If the above procedures do not solve the problem, replace the UI.
d 9	d 9	LOW VOLTAGE DETECTION ERROR
		Incoming voltage detected below 90vac for 8 seconds.
		Possible Causes – Voltage drop due to multiple washers on same circuit.
		– Worn outlet.
		Procedure 1. Clear error code.
		2. Unplug the washer or disconnect power.
		3. Check the wire harness connection between the RFI filter and the transformer.
		If the above procedures do not solve the problem, replace the UI.

ACCU TRAC <sup>®</sup> Indication	WASHER DISPLAY	EXPLANATION AND RECOMMENDED PROCEDURE
d/3 d/3		COIN 2 ERROR
		The Coin 2 sensor is detected as blocked for 8 seconds.
		Possible Causes – Coin vault full of money.
		<ul> <li>Blocked or dirty sensor.</li> </ul>
		Procedure 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.
		d13 only occurs with coin 2 installed. If the above
		procedures do not solve the problem, replace the UI.
d15	d15	GENERATION 2 DEBIT CARD READER ERROR
		No communication from installed debit card reader in Generation 2 debit mode for 5 minutes.
		Possible Causes – Card reader Gen 2 not installed, when washer is in Ed mode.
		<ul> <li>Poor contact or communication cable not connected between UI (AA3) and the card reader.</li> </ul>
		<ul> <li>Card reader failure.</li> </ul>
		Procedure 1. Clear error code.
		2. Unplug the washer or disconnect power.
		<ol> <li>Check the wire harness connections between User Interface (AA3) and the debit card reader Gen2. Do continuity test on cable.</li> </ol>
		4. Make sure you are using a Gen2 card reader.
		5. Reconnect power and wait for 5 minutes.
		If the above procedures do not solve the problem, replace the UI.

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.

## **DIAGNOSTIC TEST**

The washer has two different modes of diagnostics:

The Manual Key Functions in Diagnostic Sub-Modes allows running of a diagnostic cycle. 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 you to verify 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, sensors, and general state of the washer.

Key functions in diagnostic sub-modes: The washer is capable of assuming three submodes:

- 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 PR Models:

- Remove the AA1 connector from the UI board or insert a manual diagnostic card.
- Enter the Service Access Code (See page 3-4) for PR washer models setup as PN without a key switch installed.
- Insert key and turn, if diagnostic key switch is installed on PR models set-up as PN washers.
- 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 QUICK CYCLE button for 2 seconds.
- To access Set-up Mode, without erasing the current error, press DELICATES AND 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 QUICK CYCLE button for 1 second.

For PR Models:

- Remove the AA1 connector or insert a manual diagnostic card.
- For PR washers set up as PN washers, the Service Access Code may be used.
- Insert key and turn, if diagnostic key switch is installed on models set-up as PN washers.
- When dAS is displayed, press QUICK CYCLE button for 1 second.

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 AND KNITS button (See page 6-8).
- To access the Manual Overview Test, press the WHITES button (See page 6-9).
- To run a Quick Drain and Spin, press the COLORS button.
- To access the Washer Cleanout Cycle, press the BRIGHTS button.
- To Credit a Free Cycle, press the PERM. PRESS button.
- To Exit the Flashing Mode and return to Setup Mode, press the QUICK CYCLE button.

#### SPECIAL CYCLE MODE

This describes the diagnostic cycles accessed through the Flashing Mode.

### QUICK OVERVIEW TEST

- This cycle consists of 8 steps. In each step, the washer will perform a Control Action as described in the table below. Once the action is completed, the cycle 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 QUICK CYCLE.
- To exit from the complete Quick Overview Test, press the QUICK CYCLE button.

Step	Display Indication	Control Action	Actuators to be checked
1	Delicates	Door locks, basket turns 1/2 revolution, then door unlocks and relocks.	<ul> <li>Door lock system</li> <li>Child safety routine</li> <li>Motor control (MCU)</li> </ul>
2	CCU EEPROM Version & Knits	Fill by both cold water inlet valves (4 liters) into BLEACH compartment	<ul> <li>Cold water inlet valves #1 and #2</li> <li>Pressure switch: Suds Level</li> </ul>
3	CCU Software Version Woolens	Fill by hot water inlet valve to Wash Level into MAIN WASH compartment.	<ul> <li>Hot water inlet valve</li> <li>Pressure switch: Wash Level</li> </ul>
4	MCU Software Version Whites	Drum executes tumbling at wash speed (30 seconds)	<ul><li>Motor</li><li>Motor control (MCU)</li></ul>
5	MCU Hardware Version Brights	Drum executes tumbling at wash speed (30 seconds)	<ul><li>Motor</li><li>Motor control (MCU)</li></ul>
6	UIC EEPROM Version Colors	Drain pump is ON.	<ul><li>Drain pump</li><li>Pressure switch*</li></ul>
7	UIC Software Version Permanent Press	Drum rotates counter-clockwise and ramps up. Performs unbalance procedure before and after spinning. If not interrupted, the basket will slow and stop; after reaching 0 rpm, the door unlocks and Step 8 will be skipped.	<ul> <li>Motor</li> <li>Motor control (MCU)</li> <li>Drain pump on</li> </ul>
8	Delicates	This step is only apparent if Step 7 is manually advanced prior to the basket reaching 0 rpm (washer pumps out if needed). Door unlocks (washer returns to flashing mode).	Door unlock

#### Models MHN30PD, MHN30PR, and MHP30PR

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 switch.

\*The washer will drain until pressure switch reaches lowest level for 10 seconds, then moves to next step.

6-8

### MANUAL OVERVIEW TEST

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

- This cycle consists of 7 steps. In each step, the washer will perform a Control Action as described in the table below. 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 QUICK CYCLE.
- To exit the Manual Overview Test at any time, press the QUICK CYCLE button.

Step	Display	Exit Condition	Control Action	To Be Checked
1	Delicates	On completion only	Door locks, basket turns 1/2 revolution, then door unlocks and relocks.	<ul> <li>Door lock system</li> <li>Child safety routine</li> </ul>
2	& Knits	On button press or if overfill level is detected	Filling with both valves.	<ul> <li>Both Cold Water Inlet Valves</li> <li>Overfill level</li> </ul>
3	Colors	On button press or completion	Drum executes reversing movement at wash speed (10 min.).	<ul><li>Motor</li><li>Motor Control (MCU)</li></ul>
4	Permanent Press	On button press or completion	Drain pump is on (4 min.).	■ Drain Pump
5	Delicates	On completion only	Drain pump is on (reach Level_sud plus 10 sec.).	Drain Pump
6	& Knits	On button press or completion	Drum rotates counterclockwise and ramps up to maximum speed.	<ul><li>Motor</li><li>Motor Control (MCU)</li></ul>
7	Woolens	On button press only after rpm=0 & door is unlocked	Stop motor to 0 rpm. Door unlocks.	<ul> <li>Motor</li> <li>Motor Control (MCU)</li> <li>Door lock system</li> </ul>

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 switch.

## DIAGNOSTIC TEST QUICK GUIDE

The following table summarizes button functions among the diagnostic sub-modes

			V		
Button Name on Interface	Generic Button 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 AND KNITS	Enter / Advance	Press for 1 second	Exit failure code display mode and enter set-up mode without erasing code.	Access Quick Overview Test Program	Move to next step
PERM. PRESS	Slew	Press for 1 second	Inactive	Credit a Customer Cycle	Move to next step
WHITES	None	N/A	Inactive	Access Manual Overview Test Cycle	Move to next step
COLORS	None	N/A	Inactive	Access a Quick Drain & Spin	Move to next step
BRIGHTS	None	N/A	Inactive	Access Washer Clean-out Cycle	Move to next step

#### Button Functions in Diagnostic Mode Table

### 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, 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 AND KNITS button until the display reads 2.XX.
- Press the PERM. PRESS button.
- Press the DELICATES AND KNITS button to move to the next option (See page 6-12).
- If the washer displays an error code, consult the "Code Display" (See page 6-6).

#### 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 PERM. PRESS button, the washer will access the Help Mode submenu.
- Press the DELICATES AND KNITS button to advance through the help codes (See page 6-12).
- If the washer displays an error code, consult the "Code Display" section (See page 6-12).

Exit Help Mode Submenu by pressing the PERM. PRESS button.

## **BUTTON FUNCTIONS IN HELP MODE TABLE**

Button Name on interface	Generic Button Function	Result While Software Version Spins, Motor Power, Dispenser State	Result While Help Code Displays
PERM. PRESS	Slew	Exits help code and returns to set-up mode - either dAS display or Mode 2.XX	Exits help code and returns to set-up mode - either dAS display or Mode 2.XX
QUICK CYCLE	Mode Select	Inactive - no result	Clears all 3 help codes
DELICATES AND KNITS	Mode Advance	Advances through next help sub-mode	Advances through each help code.

#### HELP MODE SYMBOLS AND ELEMENTS

Along with the 15 steps of the 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)
<sup>o</sup> 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

Be sure to perform the Diagnostic tests before replacing the system components

### **HELP CODES**

#### **HELP MODE SUBMENU**

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.
	<b>Video Note:</b> SudS and 0 minutes alternating on display while door is unlocked happens when excess suds is detected in the final spin and washer could not reach spin speeds. This display continues after cycle is aborted. SudS is displayed on screen for 2 minutes or until the door is closed, whichever happens sooner.
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.
	Video Note: SudS and 0 minutes alternating on display with door locked happens when cycle is aborted after the second drain, because washer is unable to get rid of excess suds. Door will remain locked for approx. 3 min. (shortened in video) then door unlocks, this continues until the door is opened. SudS is displayed on screen for 2 minutes or until the door is closed, whichever happens sooner.
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 data acquisition communications comm_suprv () routine

Display flashing "**UNBALANCE**" at end of cycle when the preceding cycle was aborted due to an unbalanced load, see videos below:

Aborted cycle - customer leaves door open.

Aborted cycle - customer closes door.

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 the F or d code, and ## is the code number.**
5	2.X##	Error history code 2, where X is the F or d code, and ## is the code number.**
6	3.X##	Error history code 3, where X is the F or d code, and ## is the code number.**
7	4.X##	Error history code 4, where X is the 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	UI software revision , where XX is the software number.
11	EU.XX	UI EEPROM revision, where XX is the EEPROM number.
12	SPIN .XXX	XXX is the current speed of the drum, displayed in rpm.
13	P.XXX	The relative amount of power requested by the motor, where XXX is the value in watts.
14	U.XXX	The unbalance in the system, where XXX is the unbalance value.***

 $^{\ast}$  To erase the 3 help codes, press QUICK CYCLE button.

<sup>\*\*</sup> 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 KEY FUNCTION IN DIAGNOSTIC SUB-MODE.

<sup>\*\*\*</sup> The values 255 and 254 are reserved numbers for specific cases. (255=unbalance has not been calculated yet, 254=unbalance could not be calculated.)

#### PUMP MOTOR CONTINUITY TEST

Pins	Result
1 to 2	Normal = Approx. 12.3 ohms
	Abnormal = Infinity

### **DRIVE MOTOR OHM TEST**

- 1. Unplug washer or disconnect power.
- 2. Disconnect the wire harness from the motor and measure the resistance of the motor. Use the following table:

Pins	Result
1 To 2	Normal = Approx. 6.45 ohms
2 to 3	Abnormal = Infinity
1 to 3	

### **TRANSFORMER OHM TEST**

Primary 30-35 ohms

Blue to blue 1 ohm

White to white 2 ohms

Yellow to blue 0.5 ohms

#### WATER TEMPERATURE SENSOR

- 1. Unplug washer or disconnect power.
- 2. Disconnect the wire harness from the water temperature sensor and measure the resistance of the sensor. Use the following table. An abnormal condition is an open circuit. This reading can be taken from the cable attached to the CCU terminal TH2.

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

#### CYCLE TEMPERATURE SELECTIONS

Cycle	Wash Temp.
	(All rinses are COLD)
WHITES	Hot = 116.6°F (47°C)
COLORS	Warm = 95°F (35°C)
BRIGHTS	Cold = Tap Cold
PERM. PRESS	Warm = 95°F (35°C)
DELICATES AND KNITS	Warm = 95°F (35°C)
QUICK CYCLE	Warm = 95°F (35°C)

#### CCU WIRE HARNESS CONNECTOR TABLE

Unplug washer or disconnect power before taking ohm measurements

Terminal	Component	(Ω) Ohm Value	Abnormal Value	Pin Connectors*	Wire Coding
HE2	Wax Motor	1.2kΩ 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	165Ω	Infinity**	1, 2 door lock 2, 3 door unlock	
TH2	Temperature Sensor	Varies with temperature changes. See above.	Infinity**	1, 2	
DP2	Drain Pump	13Ω	Infinity**	1, 2	
DS2	Door Switch	Continuity at door close. No continuity at door open.		1, 2	
DI6	Cold Inlet Valve #2	812Ω	Infinity**	1, 3 (cold valve #1)	
VCH7	Cold Inlet Valve #3 Hot Inlet Valve #1	812Ω, either coil	Infinity** (or more than 10% lower or higher)	1, 3 (cold valve #2) 5, 7 (hot valve #3)	
IF2	RFI & Control Transformer	30Ω	Infinity** (or more than 10% lower or higher)	1, 2	
PR6	Pressure Switch	30Ω	Infinity** for all except 4, 6 with no water in tub	1,2 3,4 4,5 4,6	

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

\*\*An infinity measurement occurs when the multimeter does not detect an ohm reading, which indicates an open switch or circuit.

#### MANUALLY UNLOCKING THE DOOR LATCH

- 1. Unplug washer or disconnect power.
- 2. Remove the lower service panel
- 3. Reach up along the inside of the front panel and locate the bottom of the door switch / lock assembly.
- 4. Located on the bottom of the door switch / lock assembly is a tear-drop shaped tab.
- 5. To unlock a locked door gently pull the tab down about 1/4" or until a click is heard.
- 6. The door may be opened.

#### MANUALLY UNLATCHING TRIPPED DOOR LATCH

If the latch has been tripped, with the door open, by something being poked into the latch, it must be unlatched before the door will be able to 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. Press the white plastic of the latch and sliding it slightly, to position the metal bar at the back of the plastic latch mechanism.
- With the proper tool and knowledge it may not be necessary to remove the latch assembly to reset the trip mechanism. Using a strong metal scribe with a narrow 90 degree hook at one end, the latch can be pulled from the front to unlatch it.

### WASHER CARE

- 1. Cleaning the door seal:
- 2. Open the washer door and remove any clothing or items from the washer.
- Inspect the colored rubber seal between the front panel and the spin basket for stains.
   Pull back the seal to inspect all areas under the seal and to check for foreign objects.
- 4. If stained areas are found, wipe down these areas of the seal, using the procedure that follows:
- Mix a dilute solution, using 3/4 cup (177 mL) of liquid chlorine bleach, and 1 gal. (3.8 L) of warm tap water.
- Wipe the seal area with the dilute solution, using a damp cloth.
- Let stand 5 minutes.
- Wipe down area thoroughly with a dry cloth and let the washer interior air dry with door open.
- Make sure the glass bowl on the door is cleaned of hair and debris or the door may leak water in the wash cycle.

#### **IMPORTANT:**

- Wear rubber gloves when cleaning for prolonged periods
- Refer to the bleach manufacturer's instructions for proper use.

### WASHER CLEAN-OUT CYCLE PROCEDURE

This washer has a special cycle that uses higher water volumes in combination with liquid chlorine bleach and hot water to thoroughly clean the inside of the washer. **NOTES:** 

- Read these instructions completely before beginning the cleaning process.
- If necessary, the cleaning cycle may be interrupted, although after an interruption of an incomplete washer clean-out cycle, with the washer empty, run a rinse cycle or a partial wash cycle to thoroughly rinse the remaining bleach from the washer. Failure to do so may cause damage to the washer and to clothing added for the next cycle.
- To stop the cleaning cycle, enter the diagnostic mode and press the QUICK CYCLE button.

#### **Begin Procedure:**

- 1. Open the washer door and remove any clothing or items from the washer.
- 2. Make sure the door is closed.
- Open the dispenser drawer and immediately add 2/3 cup (160 mL) of liquid chlorine bleach to the bleach compartment.
   NOTE: Do not add any detergent to this cycle. Use of more than 2/3 cup (160 mL) of bleach will cause product damage over time.
- 4. Make sure dispenser drawer is closed.
- 5. To start the cleaning cycle, refer to the Special Cycle Mode.
  NOTE: The door will lock, the spin basket will rotate, then the door will unlock, lock again, and then the cycle will continue.

6. The cycle will determine if clothing or other items are in the washer.

a) If no items are detected in the washer, it will proceed to step 7.

b) If any items are detected in the washer,
4 dashes "----" will appear in the display. In software versions newer than version E, the
4 dashes were replaced with a scrolling
OUT of ORDER message, otherwise they are the same. When accessing the code display mode, "F/34" will be displayed.
Cancel the cycle, then repeat steps 1, 2 and 5 to start the cycle again.

- 7. Once the cycle has begun, allow the cycle to be completed.
- 8. After the cycle is complete, leave the door open slightly to allow for better ventilation and drying of washer interior.

# Always do the following to maintain washer freshness:

- Use only "HE" High Efficiency detergent
- Leave the door slightly open after each cycle to allow for better ventilation and drying of washer interior.
- Repeat the cleaning procedure monthly, using 2/3 cup (160 mL) of liquid chlorine bleach.
- If the procedure does not sufficiently improve washer freshness, please evaluate the installation and usage conditions for other causes.

### **TROUBLESHOOTING GUIDE**

PROBLEM	POSSIBLE CAUSE / TEST
	<b>NOTE:</b> Possible Cause / Tests must be performed in the sequence shown for each problem.
Won't power up	<ol> <li>Check that the washer is plugged into a working outlet and look for blown fuses.</li> <li>Unplug washer or disconnect power.</li> <li>Check continuity of line cord and RFI line filter, and replace if necessary.</li> <li>Check continuity of the wire harness that connects the CCU with the UI, and replace if necessary.</li> <li>Plug in washer or reconnect power. If the washer turns on, go to step 9.</li> <li>Check for power going from RFI line filter to Central Control Unit (CCU) and to transformer, using a multimeter.</li> <li>Check for power going from transformer to the User Interface (UI), using a multimeter.</li> <li>Check for CCU turning on by listening for a click in the CCU when washer is plugged in. If no click, replace CCU; if click, replace UI.</li> <li>Verify washer operation by running a diagnostic test or any cycle.</li> </ol>
Touch pads do not respond when pressed	<ol> <li>Verify the use of buttons in set-up mode. If the buttons respond, go to "WON'T START CYCLE". If the buttons don't respond, go to next step.</li> <li>Check the connection of the matrix key board with the user interface. Ensure that ribbon connector is not folded over backwards.</li> <li>Check for corrosion in and at the base of the ribbon connector socket on the UIC. If corrosion is present replace UIC. If no corrosion go on to next step.</li> <li>Check key pads using the matrix on page 5-8.</li> <li>Replace the key pad assembly.</li> <li>Verify the washer operation by running a diagnostic test or any cycle.</li> </ol>
Won't start cycle	<ol> <li>Open and close the door. The door must be opened between consecutive wash cycles.</li> <li>Check the door switch/lock assembly using the diagnostics. See Diagnostic Test.</li> <li>If door is locked, drain the washer.</li> <li>Unplug washer or disconnect power.</li> <li>Check the wire harness connection of the door lock.</li> <li>Check the wire harness connection of the UI–CCU.</li> <li>Plug in washer or reconnect power.</li> <li>Verify washer operation by running a Diagnostic Test or any cycle.</li> </ol>
Won't dispense	<ol> <li>Verify the washer is level.</li> <li>Verify dispenser drawer is not clogged with detergent. Visually inspect the siphon holes after disconnecting the removable tray under the dispenser drawer.</li> <li>Check water connections to the washer and within the washer. Check for plugged screen in water source.</li> <li>Check water valves in diagnostic mode.</li> <li>Check pressure switch is operating correctly and that there is no water in the washer.</li> <li>Look for indications of over-sudsing and check Help codes.</li> <li>Unplug washer or disconnect power.</li> <li>Check harness connections.</li> <li>Plug in washer or reconnect power.</li> <li>Nerify washer operation by running a Diagnostic Test or any cycle.</li> </ol>

PROBLEM	POSSIBLE CAUSE / TEST
Won't fill	<ol> <li>Check installation. Verify hot and cold water faucets are open and water pressure is available.</li> <li>Check inlet valves.</li> <li>Unplug washer or disconnect power.</li> <li>Check water connections to the washer and within the washer. Make sure water supply hoses are unobstructed and not reversed. Check for plugged screens.</li> <li>Plug in washer or reconnect power.</li> <li>Check for an operating pressure switch and air hose for obstruction.</li> <li>Check drain pump motor to ensure the pump is not running during a fill cycle, and check the drain hose to ensure water is not siphoning out during a fill cycle.</li> <li>Verify washer operation by running a Diagnostic Test or any cycle.</li> <li>Check under Won't Dispense problem (on previous page).</li> </ol>
Overfills	<ol> <li>Verify the washer is level.</li> <li>Check pump drain system – this could indicate a failure to drain.</li> <li>Unplug washer or disconnect power.</li> <li>Check pressure switch hose for air leaks and cracks or loose connection at the ends.</li> <li>Check for an operating pressure switch. Verify pressure switch operation by blowing air though the part and measuring the resistance.</li> <li>Plug in washer or reconnect power.</li> <li>Verify washer operation by running a Diagnostic Test or any cycle.</li> </ol>
Drum won't rotate	<ol> <li>Check drive belt.</li> <li>Check drive motor.</li> <li>Unplug washer or disconnect power.</li> <li>Check wire harness connections and perform continuity test on cables between MCU and motor, and also between MCU and CCU.</li> <li>Plug in washer or reconnect power.</li> <li>Check the MCU by looking for operations of the drive motor.</li> </ol>
Motor overheats	<ol> <li>Check drive motor.</li> <li>Verify correct voltage supplied to washer.</li> <li>Unplug washer or disconnect power.</li> <li>Check wire harness connections.</li> <li>Check drive belt.</li> <li>Check for a clothing obstruction between the spin basket and the outer tub.</li> <li>Plug in washer or reconnect power.</li> <li>Check the MCU by looking for operations of the drive motor.</li> </ol>
Won't drain	<ol> <li>Unplug washer or disconnect power.</li> <li>Check wire harness connections.</li> <li>Check drain pump operation.</li> <li>Check drain pump motor.</li> <li>Check that the drain hose and drain pump filter are clear of foreign objects and hose is not crushed, kinked or pushed too far into a stand-pipe.</li> <li>Make sure the drain is not trying to pump water higher than 96 inches from the base of the washer.</li> <li>Plug in washer or reconnect power.</li> <li>Verify washer operation by running a Diagnostic Test or any cycle.</li> </ol>

PROBLEM	POSSIBLE CAUSE / TEST
Washer vibrates	<ol> <li>Remove shipping system.</li> <li>Check leveling legs are locked in place</li> <li>Check leveling feet are firmly contacting the ground.</li> <li>Check that the washer is level.</li> <li>Check that the bellow has no irregularities or twists.</li> <li>Check air dampers for damage.</li> <li>Check upper support springs for connection to tub and cabinet irregularities.</li> <li>Check that all tub weight bolts are tight and weights are not damaged.</li> <li>Check that metercase bolts are tight.</li> </ol>
Incorrect water temperature	<ol> <li>Check that the inlet hoses are connected properly at the back of the washer and make sure the hoses are connected properly to the dispenser inlet ports.</li> <li>Unplug washer or disconnect power.</li> <li>Check water temperature sensor for an abnormal condition. See the Water Temperature Sensor section, (See page 5-6).</li> <li>Plug in washer or reconnect power.</li> <li>Verify washer operation by running a Diagnostic Test or any cycle.</li> </ol>
Display flashing	1. See Failure/ Error Display Codes, (See page 6-2).
Water flowing out under dispenser	<ol> <li>Check for detergent build up in dispenser housing and in the dispenser hose to the outer tub. Make sure the siphon holes in the removable section under the fabric dispenser are not plugged.</li> <li>Check for clothing article stuck between dispenser fill tube and outer tub.</li> <li>Remove the dispenser drawer and check for build up of detergent under the drawer.</li> </ol>

#### -NOTES -

# WIRING DIAGRAM



Definitions/Définitions

- IF = Input Filter/Filtre de données
- DS = Door Switch/Contacteur de porte
- DLS = Door Lock Switch/Contacteur de verrou de porte
- DP = Drain Pump/Pompe de vidange
- VC = Valve. Cold Water/Électrovanne d'eau froide
- VH = Valve, Hot Water/Électrovanne d'eau chaude

#### GROUNDING SYSTEM

Grounding switches are in place to ground 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.



