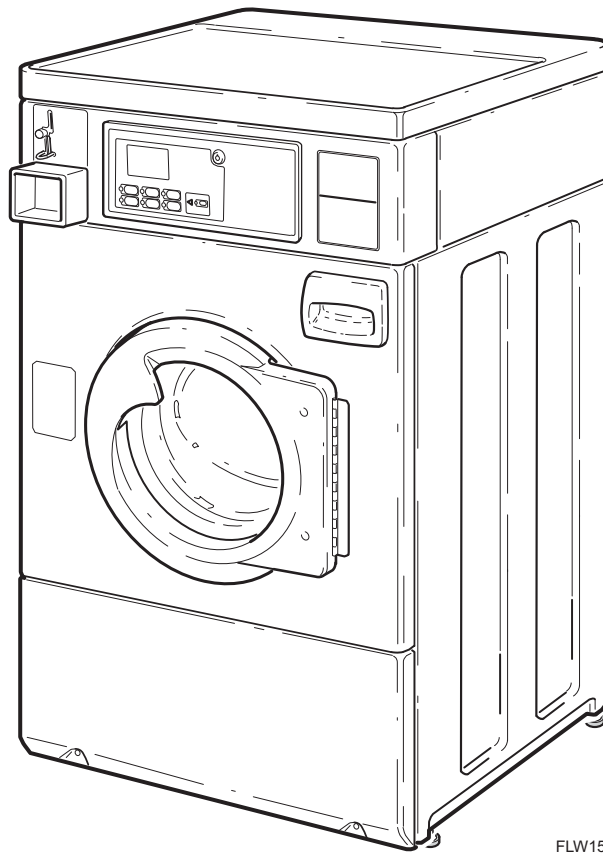


# Commercial Front Control Washers

Refer to Page 6 for Model Numbers



FLW1510C



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# Section 1

## Safety Information

Throughout this manual and on machine decals, you will find precautionary statements (“CAUTION,” “WARNING,” and “DANGER”) followed by specific instructions. These precautions are intended for the personal safety of the operator, user, servicer and those maintaining the machine.

### **DANGER**

Danger indicates the presence of a hazard that **will** cause **severe** personal injury, death or substantial property damage if the danger is ignored.

### **WARNING**

Warning indicates the presence of a hazard that **can** cause **severe** personal injury, death or substantial property damage if the warning is ignored.

### **CAUTION**

Caution indicates the presence of a hazard that **will** or **can** cause **minor** personal injury or property damage if the caution is ignored.

Additional precautionary statements (“IMPORTANT” and “NOTE”) are followed by specific instructions.


### **IMPORTANT**

The word “IMPORTANT” is used to inform the reader of specific procedures where minor machine damage will occur if the procedure is not followed.

### **NOTE**

The word “NOTE” is used to communicate installation, operation, maintenance or servicing information that is important but not hazard related.

In the interest of safety, some general precautions relating to the operation of this machine follow.

	<h2>WARNING</h2>
<ul style="list-style-type: none"><li>• Failure to install, maintain and/or operate this product according to the manufacturer’s instructions may result in conditions which can produce serious injury, death and/or property damage.</li><li>• Do not repair or replace any part of the product or attempt any servicing unless specifically recommended or published in this Service Manual and unless you understand and have the skills to carry out the servicing.</li><li>• Whenever ground wires are removed during servicing, these ground wires must be reconnected to ensure that the product is properly grounded and to reduce the risk of fire, electric shock, serious injury or death.</li></ul>	
<div>W006R2</div>	

(continued)



## WARNING

To reduce the risk of electric shock, fire, explosion, serious injury or death:

- Disconnect electric power to the washer before servicing.
- Never start the washer with any guards/panels removed.
- Whenever ground wires are removed during servicing, these ground wires must be reconnected to ensure that the washer is properly grounded.

W003



## WARNING

Repairs that are made to your products by unqualified persons can result in hazards due to improper assembly or adjustments subjecting you, or the inexperienced person making such repairs, to the risk of serious injury, electrical shock, or death.

W007



## WARNING

If you or an unqualified person perform service on your product, you must assume the responsibility for any personal injury or property damage which may result. The manufacturer will not be responsible for any injury or property damage arising from improper service and/or service procedures.

W008

**NOTE:** The WARNINGS and IMPORTANT INSTRUCTIONS appearing in this manual are not meant to cover all possible conditions and situations that may occur. Common sense, caution and care must be exercised when installing, maintaining or operating the washer.

Always contact your dealer, distributor, service agent or the manufacturer about any problems or conditions you do not understand.

### Locating an Authorized Servicer

Alliance Laundry Systems is not responsible for personal injury or property damage resulting from improper service. Review all service information before beginning repairs.

Warranty service must be performed by an authorized technician, using authorized factory parts. If service is required after the warranty expires, Alliance Laundry Systems also recommends contacting an authorized technician and using authorized factory parts.

# Section 2

## Introduction

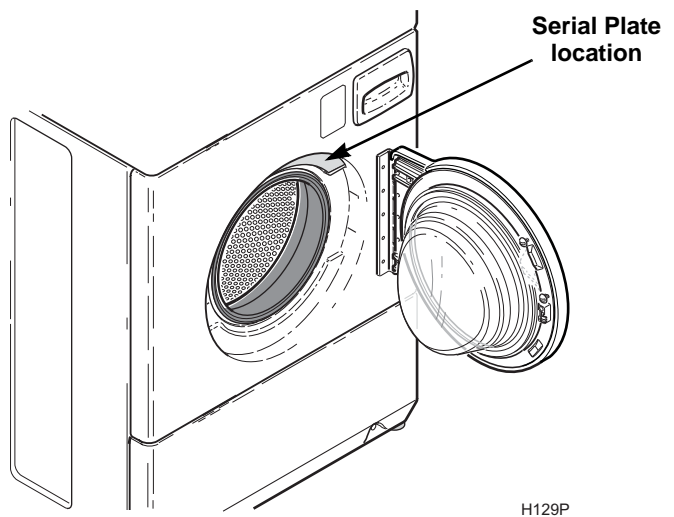
### Customer Service

If literature or replacement parts are required, contact the source from whom the machine was purchased or contact Alliance Laundry Systems at (920) 748-3950 for the name and address of the nearest authorized parts distributor.

For technical assistance, call (920) 748-3121.

### Serial Plate Location

When calling or writing about your product, be sure to mention model and serial numbers. Model and serial numbers are located on Serial plate(s) as shown.



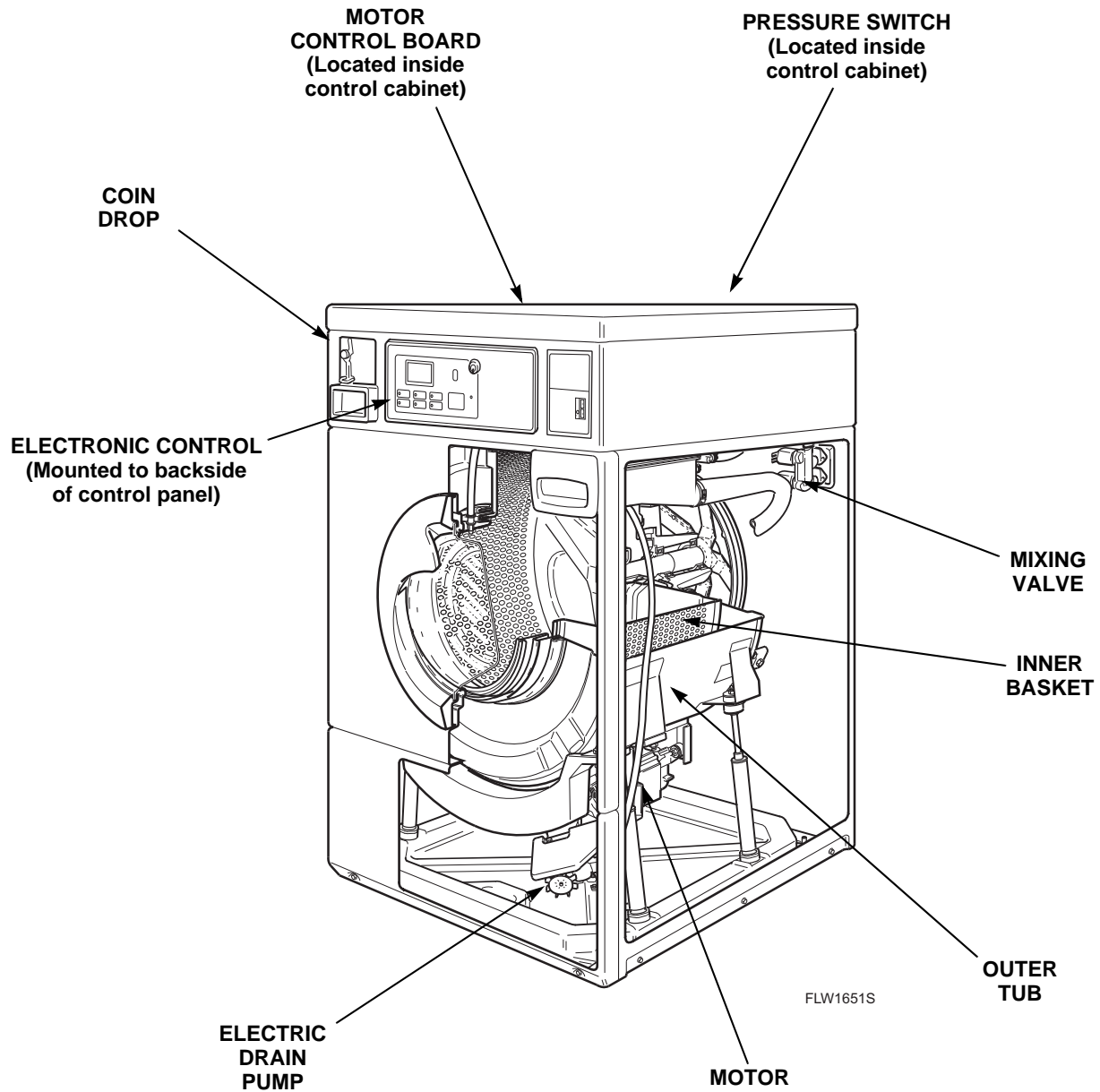
# Model Identification

Information in this manual is applicable to these washers.

MODEL NUMBER	COIN DROP INSTALLED	COIN DROP READY	CARD READER INSTALLED	CARD READER READY
HWF561*E1102	X			
HWF561*H1102	X			
HWF761*E1102			X	
HWFB61*J1102	X			
HWFF61*J1102			X	
HWFT61*H	X			
HWFT61*H1102	X			
HWFX61*H1102		X		
HWFY61*H1102				X
HWFZ61*H	X			
HWFZ61*H1102	X			
SWF561*E	X			
SWF561*H	X			
SWF661*E				X
SWF661*H				X
SWF761*E			X	
SWF761*H			X	
SWFA61*H		X		
SWFA61*J		X		
SWFB61*H	X			
SWFB61*J	X			
SWFC61*H				X
SWFC61*J				X
SWFD61*H			X	
SWFF61*J			X	
SWFH61*J	X			
SWFJ61*J			X	
SWFT61*H	X			
SWFX61*H		X		
SWFY61*H				X
SWFZ61*H	X			
* Add Letter To Designate Color. L – Almond W – White Q – Bisque				



# How Your Washer Works



### General

This frontload washer provides some of the same principles of operation as the typical topload washer. It senses water level, dispenses the desired laundry detergent, agitates the clothes for good cleaning action, pumps the water out of the washer and spins the clothing in preparation for the dryer.

The difference in operation is primarily the rotational washing agitation created for the horizontal basket and drum. This agitation tumbles the clothes in a clockwise, pause, and counter-clockwise direction. This reversing tumbling action provides an efficient washing process and requires less laundry detergent and less water.

The cycle begins by locking the loading door after the vend is satisfied. The type of cycle and water temperature are determined by the appropriate pads on the electronic control.

The inner basket starts agitating during the wash water fill. A column of air is trapped in a pressure bulb and hose. The air pressure continues to increase as the inner basket fills with water until it is great enough to activate the pressure switch which then causes the wash fill to stop.

The agitate cycle tumbles the clothing in a clockwise direction for a period of 20 seconds, pauses for 9 seconds and then tumbles the clothing in a counterclockwise direction for 10 seconds. This agitation continues until the wash soak cycle. The machine stops agitating and turns on the pump which removes the wash water.

Upon completion of the wash cycle, the machine goes into a rinse cycle. Fresh cold water is brought into the inner basket via the mixing valve until the pressure switch shuts off the water while agitating. The rinse cycle consists of agitation for a predetermined amount of time and then a spin mode with the pump running where the machine goes into a series of 4 short 500 RPM spins. Two of these rinse cycles will normally take place. A third extra rinse cycle is optional.

After all the rinse cycles have been completed, the washer goes into a final high spin cycle to extract as much water as possible from the clothing to prepare them for the dryer. The spin speeds and duration of this final high spin cycle are determined by the type of wash cycle selected (refer to table).

**NOTE: Washer may not reach 1000 RPM because of an out-of-balance condition. Control may limit speed to 850, 650 or 500 RPM depending on severity of out-of-balance condition.**

	Regular	Perm Press	Delicate
<b>650 RPM</b>	<b>5-1/2 minutes</b>	<b>6 minutes</b>	<b>4 minutes</b>
<b>1000 RPM</b>	<b>1-1/2 minutes</b>	<b>1 minute</b>	<b>0 minutes</b>

### Technical

The basic operational system of this washer consists of the electronic front-end control, the motor control, pressure switch, water valves, electric pump, D.C. motor and transformer.

The front end control performs all control and timing functions like the timer in a topload washer. The front end control sends simple speed and output commands to the motor control via serial communication. The front end control powers the door lock, pump and the motor control.

The motor control powers the D.C. motor and performs all motor control functions. The motor control also powers the water and dispenser valves and passes the pressure switch status to the front end control. The motor control is powered through the door switch, door lock switch and front end control. An auto transformer provides 240 VAC for the motor which the motor control converts to D.C. The motor control also alerts the front end control to any errors in the motor.

The motor control uses a speed sensor on the motor to measure the drum RPM. Before entering any spin step the motor control measures the RPM of the drum to sense out-of-balance. The motor control will try to redistribute the clothes if an out-of-balance condition exists. The motor control will limit the spin speed to several speeds depending on the severity of the out-of-balance condition. If the out-of-balance condition is severe enough, the motor control will limit speed to 90 RPM and will not spin.

**NOTE: An additional out-of-balance switch is used to detect any out-of-balance condition during spins. If this switch opens during a spin step the motor control immediately stops and restarts the spin step.**

# Section 3

## Troubleshooting



### WARNING

To reduce the risk of electric shock, fire, explosion, serious injury or death:

- Disconnect electric power to the washer before servicing.
- Never start the washer with any guards/panels removed.
- Whenever ground wires are removed during servicing, these ground wires must be reconnected to ensure that the washer is properly grounded.

W003

#### 1. TROUBLESHOOTING COIN DROP

##### a. Non-Electronic Coin Drops:

When coin is placed into coin slot, the coin should roll down drop and be heard dropping into coin vault. If coin does not fall into coin vault or if coin drop sensor does not register that coin has been entered, follow troubleshooting instructions on following page. Refer to *Figure 1* for path that coin follows when working properly.

**IMPORTANT:** Never use oil to correct coin drop problems. Oil residue will prevent coins from rolling properly.

**IMPORTANT:** Do not bend or damage mechanical parts within coin drop.

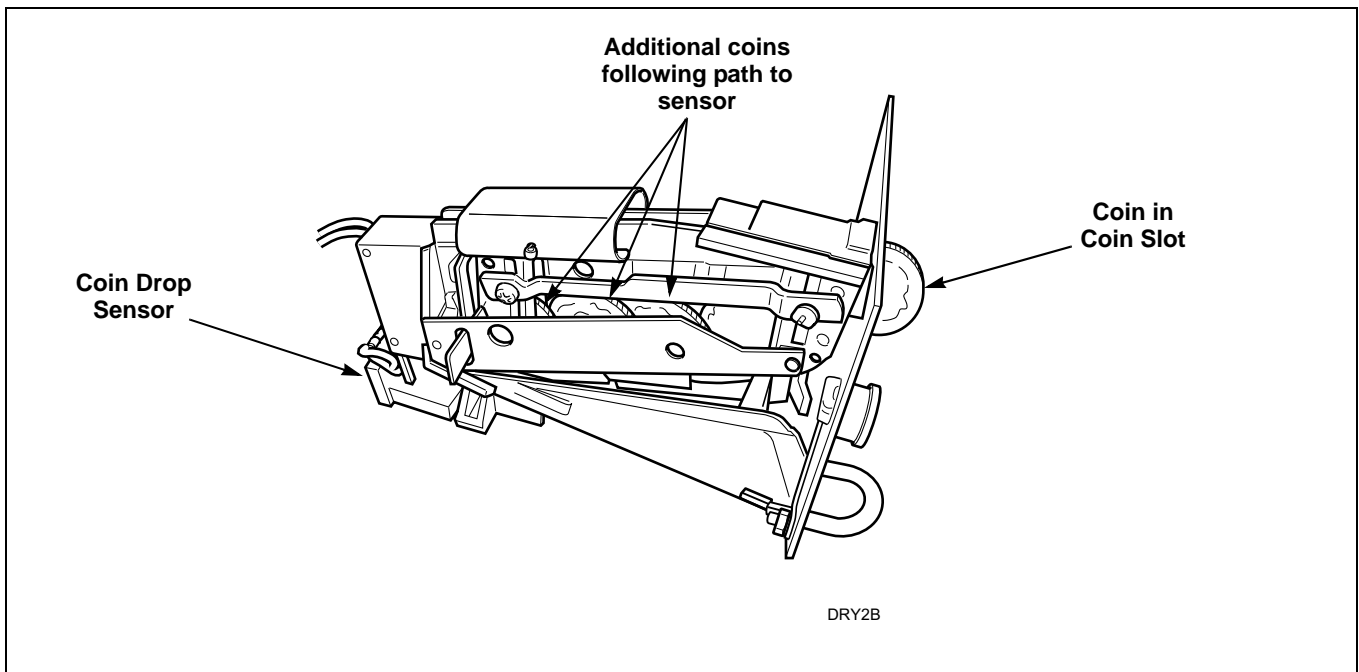
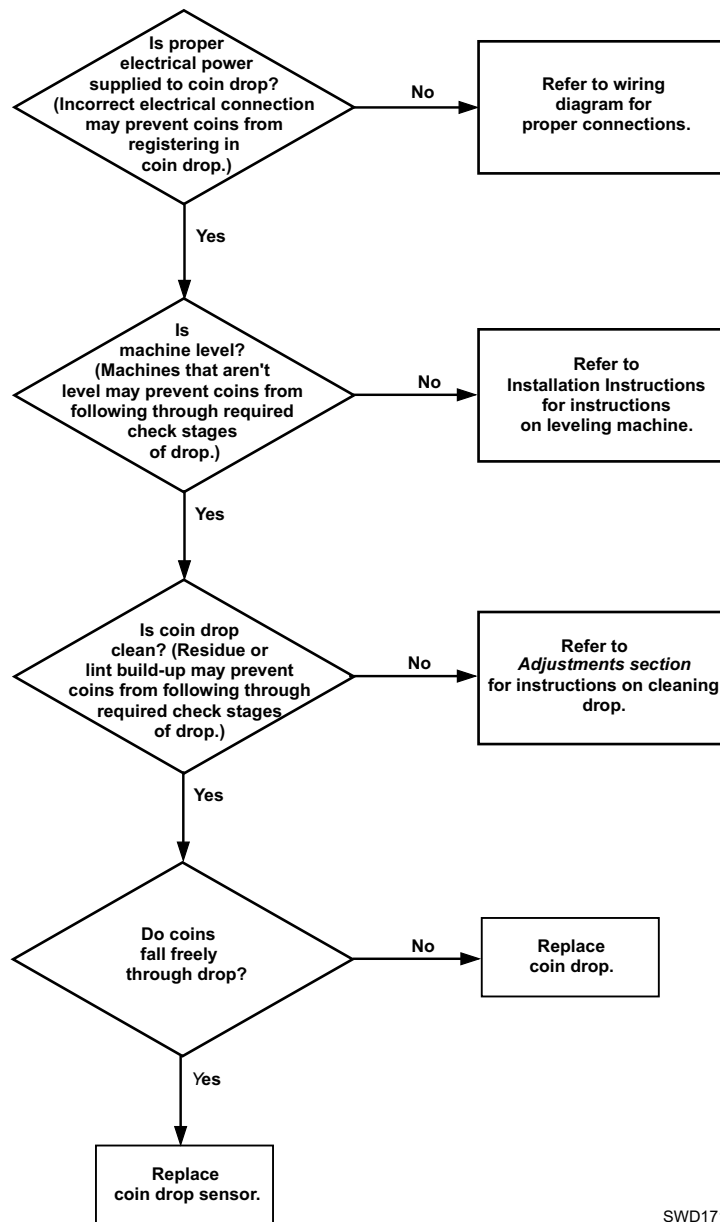


Figure 1

1. TROUBLESHOOTING COIN DROP (continued)



SWD1714S



## WARNING

To reduce the risk of electric shock, fire, explosion, serious injury or death:

- Disconnect electric power to the washer before servicing.
- Never start the washer with any guards/panels removed.
- Whenever ground wires are removed during servicing, these ground wires must be reconnected to ensure that the washer is properly grounded.

W003

### b. Electronic Coin Drops:

If coin drop is not accepting coins, perform the following:

- (1) Clean coin drop. Refer to *Paragraph 69*.
- (2) On electronic coin drops with an old-style tension spring (shown in *Figure 2* and *Figure 4*), test and replace tension spring using the following instructions.

### REMOVE COIN DROP FROM MACHINE

- (1) Disconnect electrical power to machine and drop.
- (2) Remove coin drop from machine.

### TEST TENSION SPRING

- (1) Push coin return button to open and close coin drop cover to clear possible coin jams. Refer to *Figure 2*.

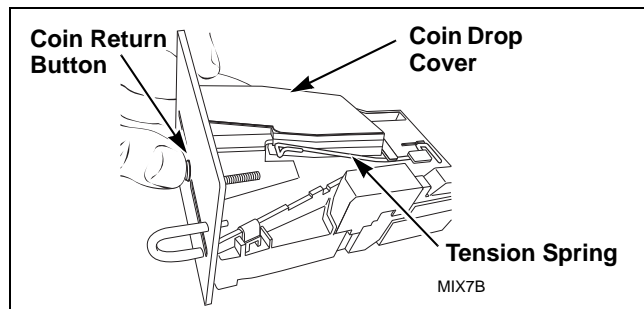


Figure 2

- (2) Manually hold down coin drop cover and insert coin. Refer to *Figure 3*.

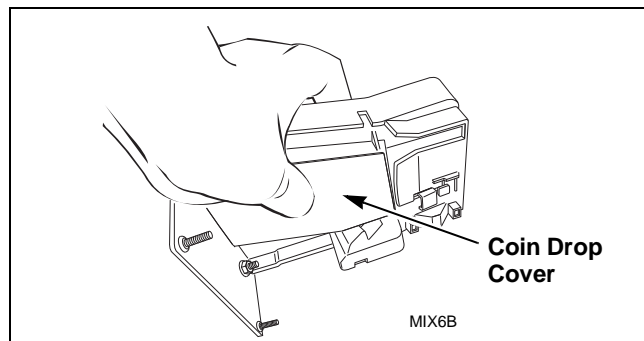


Figure 3

- (3) If coin drop now operates properly, replace tension spring using instructions on following pages.

### REPLACE TENSION SPRING

- (1) Move tension spring downward until cover catch is free. Refer to *Figure 4*.

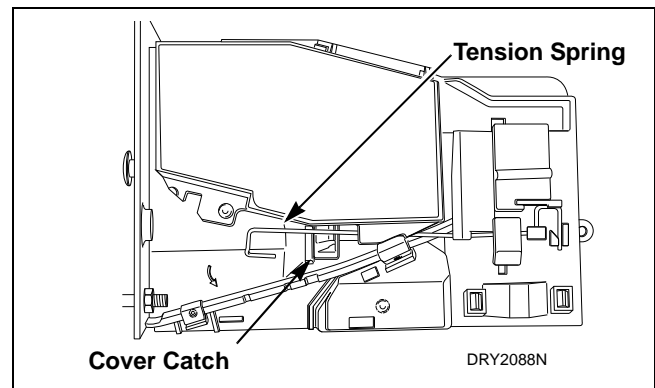


Figure 4

- (2) Open cover for coin drop.
- (3) Place a small flathead screwdriver under right side of tension spring and lift up. Refer to *Figure 5*.

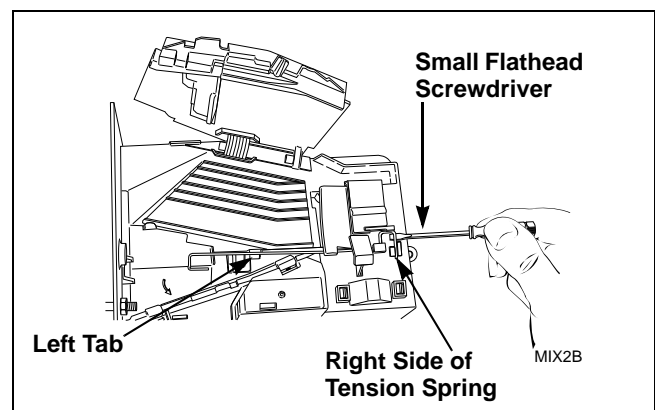


Figure 5

- (4) Use screwdriver to move spring approximately 3 mm to left.
- (5) Lift spring over left tab. Refer to *Figure 5*.



## WARNING

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- Disconnect electric power to the washer before servicing.
- Never start the washer with any guards/panels removed.
- Whenever ground wires are removed during servicing, these ground wires must be reconnected to ensure that the washer is properly grounded.

W003

- (6) Rotate spring clockwise, 40 to 60 degrees, until it is free from right tabs. Refer to *Figure 6*.

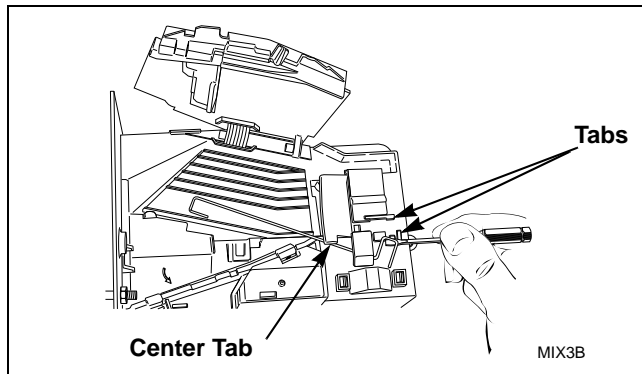


Figure 6

- (7) Use screwdriver to remove spring from center tab. Refer to *Figure 6*.  
 (8) Lift spring, with attached clip, off drop.  
 (9) Remove clip from spring. Refer to *Figure 7*.

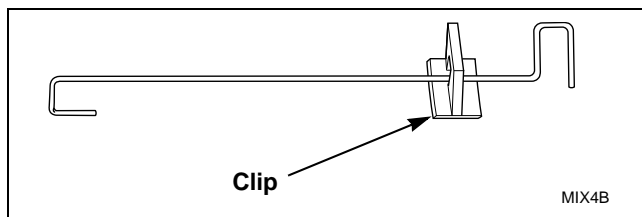


Figure 7

- (10) Attach clip to new tension spring, Part No. 209/00598/02.

- (11) Place clip, installed on spring, in slot on coin drop. Refer to *Figure 8*.

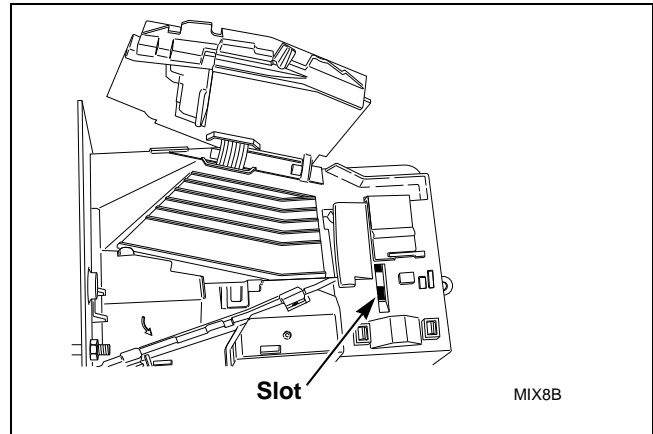


Figure 8

- (12) Use a small flathead screwdriver to push spring under center tab. Refer to *Figure 9*.

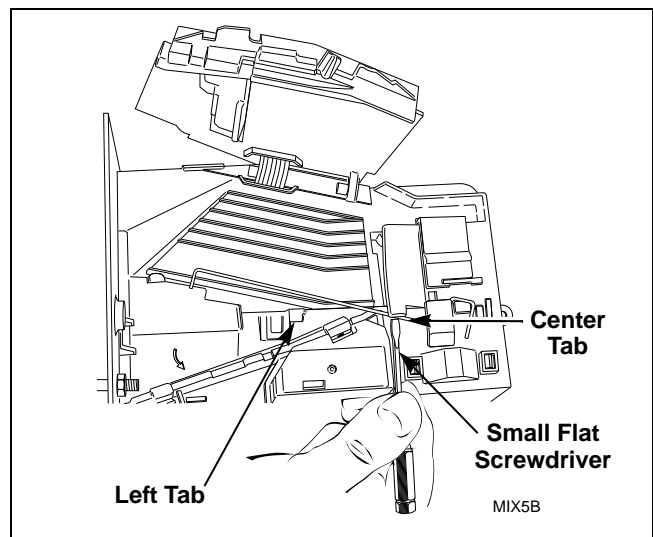


Figure 9

- (13) Lift spring gently to place in position under left tab.  
 (14) Push spring to right until it snaps into position. Refer to *Figure 5*.  
 (15) Close coin drop cover.



## WARNING

To reduce the risk of electric shock, fire, explosion, serious injury or death:

- Disconnect electric power to the washer before servicing.
- Never start the washer with any guards/panels removed.
- Whenever ground wires are removed during servicing, these ground wires must be reconnected to ensure that the washer is properly grounded.

W003

- (16) Move tension spring over cover catch.  
Refer to *Figure 4*.

### REINSTALL COIN DROP INTO MACHINE

- (1) Reinstall coin drop into machine.

- (2) Reconnect electrical power to machine and drop.

- (3) Add a coin to drop to verify that coin drop is operating properly and that electrical connection is working properly.

### 2. NO START ON COIN SLIDE FRONT CONTROL WASHERS

- If coin slide fails to initiate cycle start, review coin slide extension dimensions in *Figure 10*. It is possible that the wrong hole placement for locating the clutch activation arm is causing the “No Start” condition.
- If hole dimensions vary from *Figure 10*, replace with 685593 coin slide extension.
- Retest machine for proper operation with new extension.

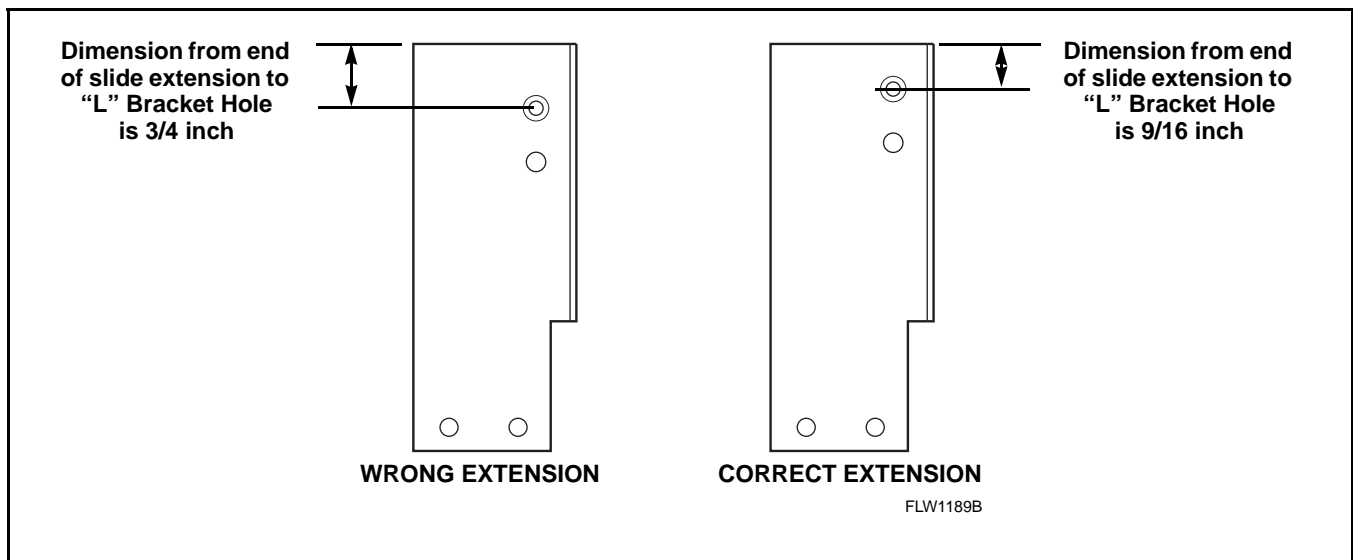


Figure 10

### 3. NO SPIN CONDITION – MODELS THROUGH SERIAL NO. 9811005968

A “no spin” condition could be the result of an open circuit in the wire harness or out-of-balance switch.

- Check that the harness is still connected to the out-of-balance switch. The wiring diagram may show the out-of-balance switch as a normally open switch which is incorrect. The switch is a normally closed switch.
- To test the electrical circuit, disconnect electrical power to the washer.
- Remove the “H3” connector from the motor control board.
- Use an Ohm meter and check the black/white to violet/white wires. Circuit should read closed, an open reading indicates a bad switch or wire harness problem.
- Flex the harness at the plastic retainer and test the switch and if okay, the base wire harness has an open circuit and MUST be replaced.
- After replacing the wire harness, tape the harness wires to the left front shock 1 ½ inches from top of shock. Refer to *Figure 11*.



## WARNING

To reduce the risk of electric shock, fire, explosion, serious injury or death:

- Disconnect electric power to the washer before servicing.
- Never start the washer with any guards/panels removed.
- Whenever ground wires are removed during servicing, these ground wires must be reconnected to ensure that the washer is properly grounded.

W003

**IMPORTANT:** Leave a minimum of 8 inches of slack between tape on shock and the plastic wire retainer on the out-of-balance switch mounting bracket. Refer to *Figure 11*.

### 4. TROUBLESHOOTING KNOCKING NOISE

If a frontload washer produces a noise similar to a knock on a door, it might be due to a flat spot on the belt. The knocking sound is made when the flat spot hits the pulley. The knocking may occur during a pulse spin and fade after reaching a higher RPM.

To correct this condition, replace the washer belt. Refer to *Paragraph 52*.





## WARNING

To reduce the risk of electric shock, fire, explosion, serious injury or death:

- Disconnect electric power to the washer before servicing.
- Never start the washer with any guards/panels removed.
- Whenever ground wires are removed during servicing, these ground wires must be reconnected to ensure that the washer is properly grounded.

W003

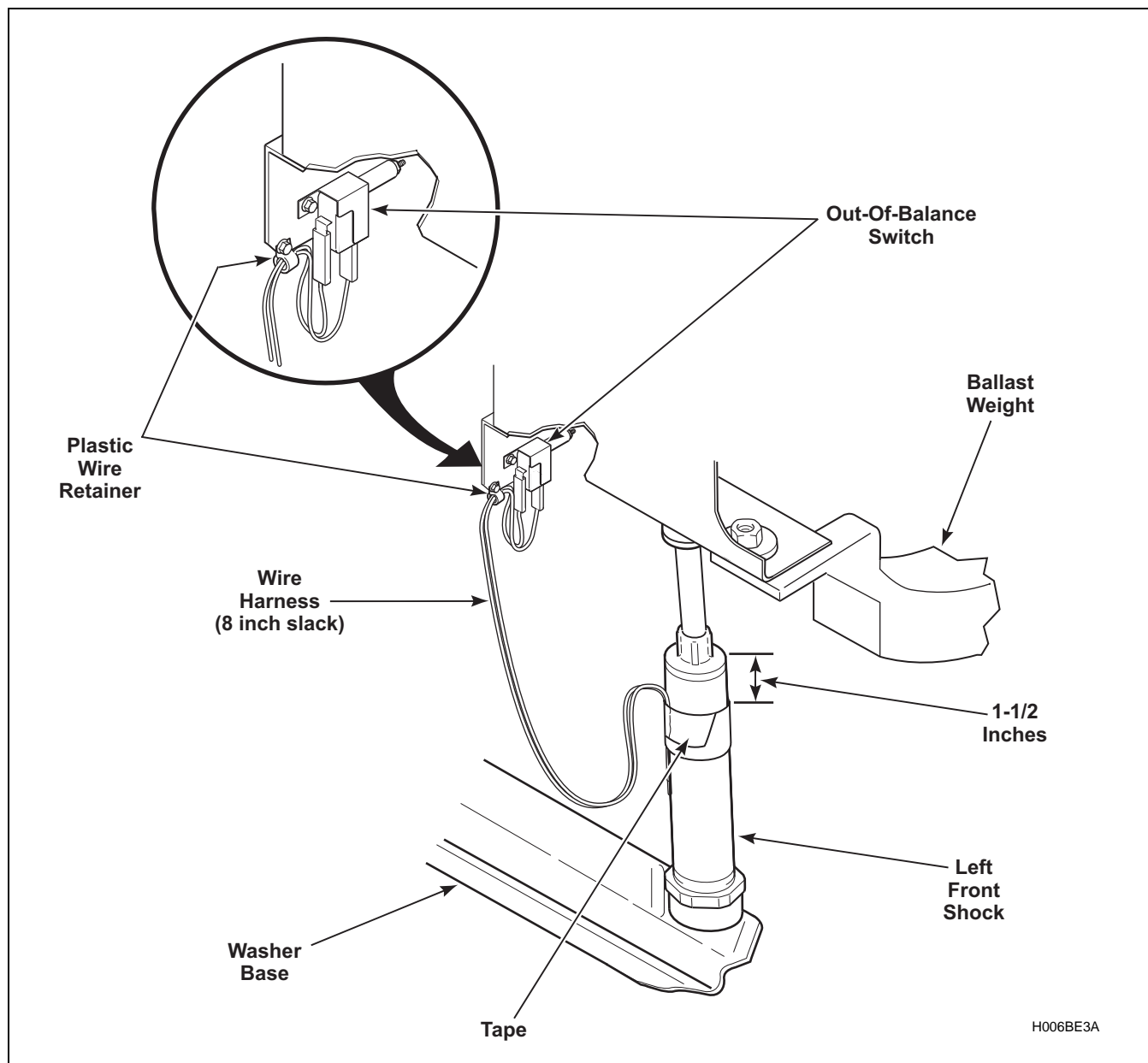


Figure 11



## WARNING

To reduce the risk of electric shock, fire, explosion, serious injury or death:

- Disconnect electric power to the washer before servicing.
- Never start the washer with any guards/panels removed.
- Whenever ground wires are removed during servicing, these ground wires must be reconnected to ensure that the washer is properly grounded.

W003

### 5. NO MOTOR ROTATION, OR DRIVE FAILURE CODE “E:DF” ON ELECTRONIC DISPLAY UNITS

**NOTE:** Verify that motor is receiving proper voltage. Disconnect electrical power to washer.

#### TEST PROCEDURE

- At the rear of the washer, remove the lower access panel.
- Reach in through the access panel opening and disconnect motor wire harness from motor.
- Using an Ohmmeter, measure resistance at the terminals on the motor. Refer to *Table 1*.

Motor Resistance Values		
TACH INPUT	Terminals 6-7	Approximately 15 Ohms
BRUSHES	Terminals 4-5	Less than 70 Ohms
WINDING	Terminals 1-3	Approximately 1.1 Ohms
WINDING	Terminals 1-2	Approximately 2.0-2.4 Ohms
WINDING	Terminals 2-3	Approximately 3.4 Ohms
<b>NOTE: Resistance values may vary depending on type of Ohmmeter used.</b>		

Table 1

- Replace motor if there is an open circuit on tach input (terminals 6-7) or winding circuits (terminals 1, 2 and 3), or if there is continuity between any terminal and the motor housing.
- An open circuit between terminals 4 and 5 indicates a stuck or worn brush. Refer to appropriate service procedure below.

#### SERVICE PROCEDURE: STUCK BRUSHES

- Remove motor from washer. Refer to *Paragraph 59*.
- Using a flashlight, view brushes through holes in motor end shield. Refer to *Figure 12*.
- Inspect both brushes to determine if either brush braided wire is binding the brush movement. The braided wire might be snagged on the seam in the corner of the metal brush holder. Refer to *Figure 12*.

**NOTE:** The copper braided wire should be located in the center of the brush assembly. If the braided wire has fallen to the bottom of the brush, it will cause binding.

- After determining which brush assembly is binding, carefully use the tip of a small screwdriver to unsnag and reposition the braided wire. Refer to *Figure 13*. Make sure spring is making unobstructed contact with the end of the brush. Rotate armature by hand to assure that brushes are seated.
- Recheck resistance between motor terminals 4 and 5 to verify the brush position has been corrected.
- Reinstall motor in washer.
- Run washer through cycle to verify proper operation.



## WARNING

To reduce the risk of electric shock, fire, explosion, serious injury or death:

- Disconnect electric power to the washer before servicing.
- Never start the washer with any guards/panels removed.
- Whenever ground wires are removed during servicing, these ground wires must be reconnected to ensure that the washer is properly grounded.

W003

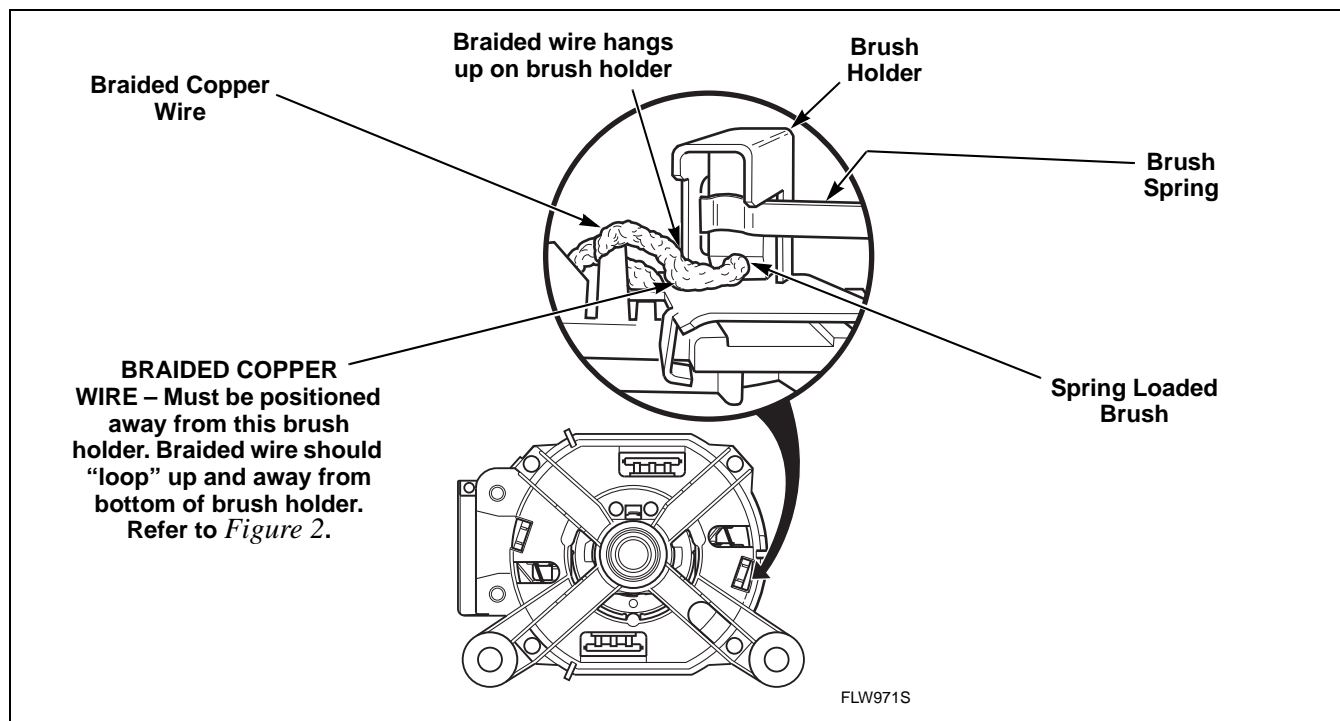


Figure 12

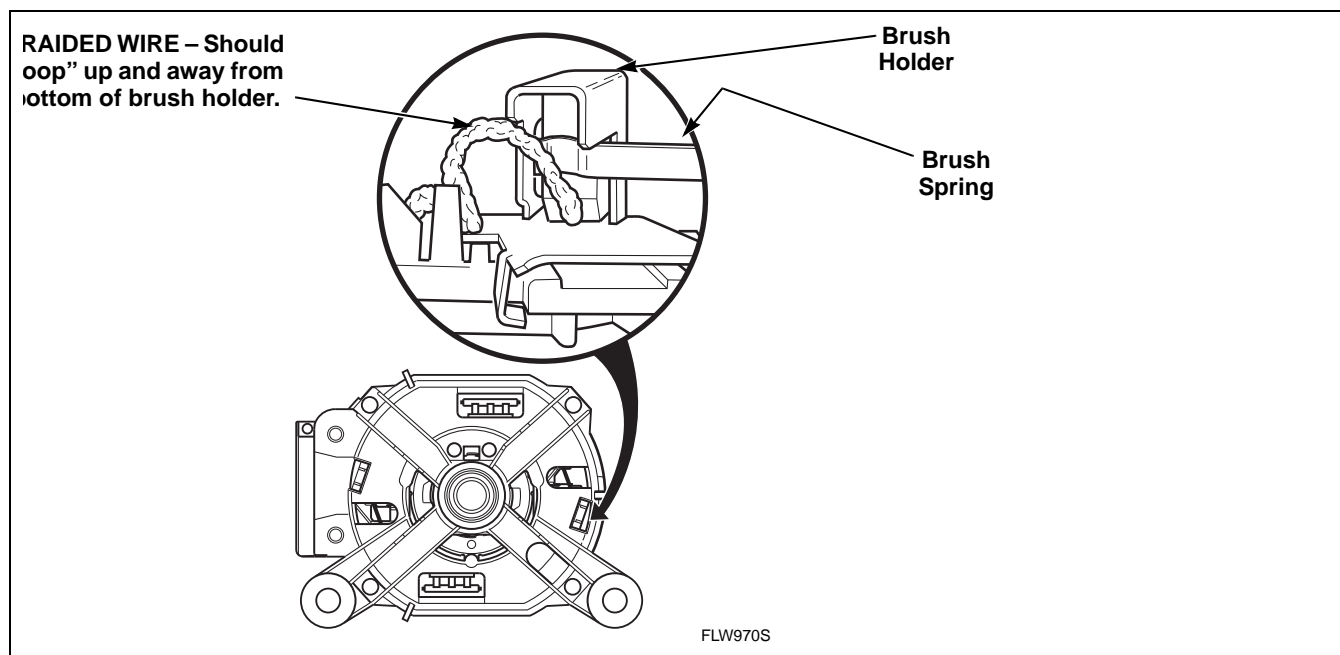


Figure 13



## WARNING

To reduce the risk of electric shock, fire, explosion, serious injury or death:

- Disconnect electric power to the washer before servicing.
- Never start the washer with any guards/panels removed.
- Whenever ground wires are removed during servicing, these ground wires must be reconnected to ensure that the washer is properly grounded.

W003

### SERVICE PROCEDURE: WORN BRUSHES

- a. Remove motor from washer. Refer to *Paragraph 59*.
- b. Using a flashlight, view brushes through holes in motor end shield. Refer to *Figure 14*.
- c. Inspect both brushes to determine if either brush is worn. Refer to *Figures 14 and 15*.

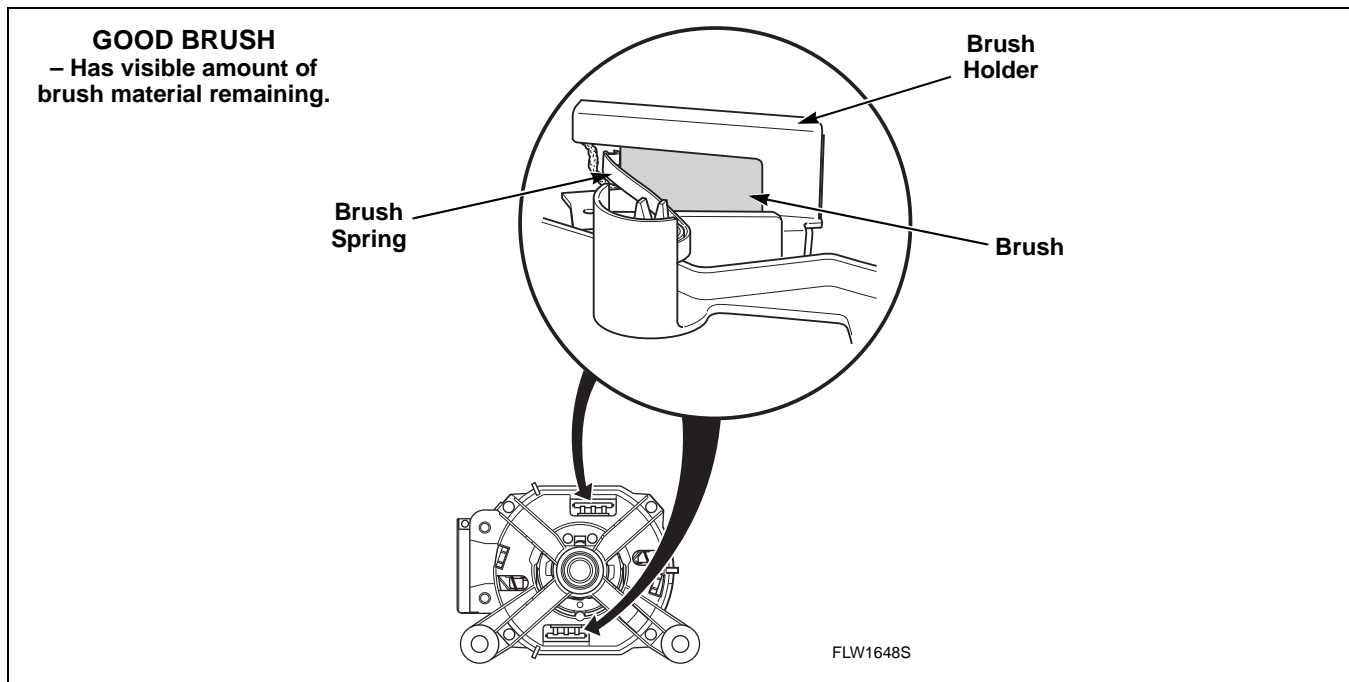


Figure 14

- d. Replace worn brushes with 738P3 Motor Brush Kit. Follow instructions provided in kit.



## WARNING

To reduce the risk of electric shock, fire, explosion, serious injury or death:

- Disconnect electric power to the washer before servicing.
- Never start the washer with any guards/panels removed.
- Whenever ground wires are removed during servicing, these ground wires must be reconnected to ensure that the washer is properly grounded.

W003

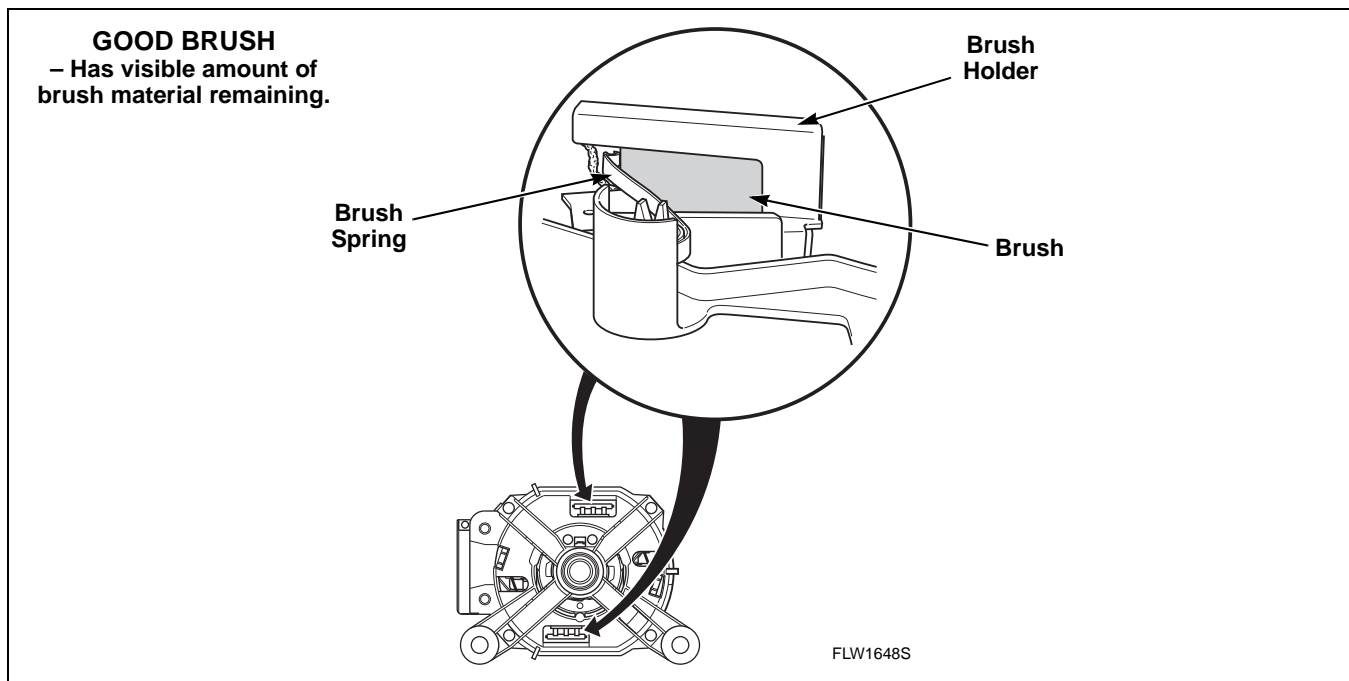



Figure 15

### SERVICE PROCEDURE: CLOGGED BRUSHES

- Remove motor from washer. Refer to *Paragraph 59*.
- Using a flashlight, view brushes through holes in motor end shield. Refer to *Figure 14*.
- Inspect both brushes to determine if they are clogged due to a build-up of carbon dust.
- If there is a visible amount of brush left, use a screwdriver or similar device to push brush back and forth to loosen and remove dust. Refer to *Figures 14*.

## EDC Models

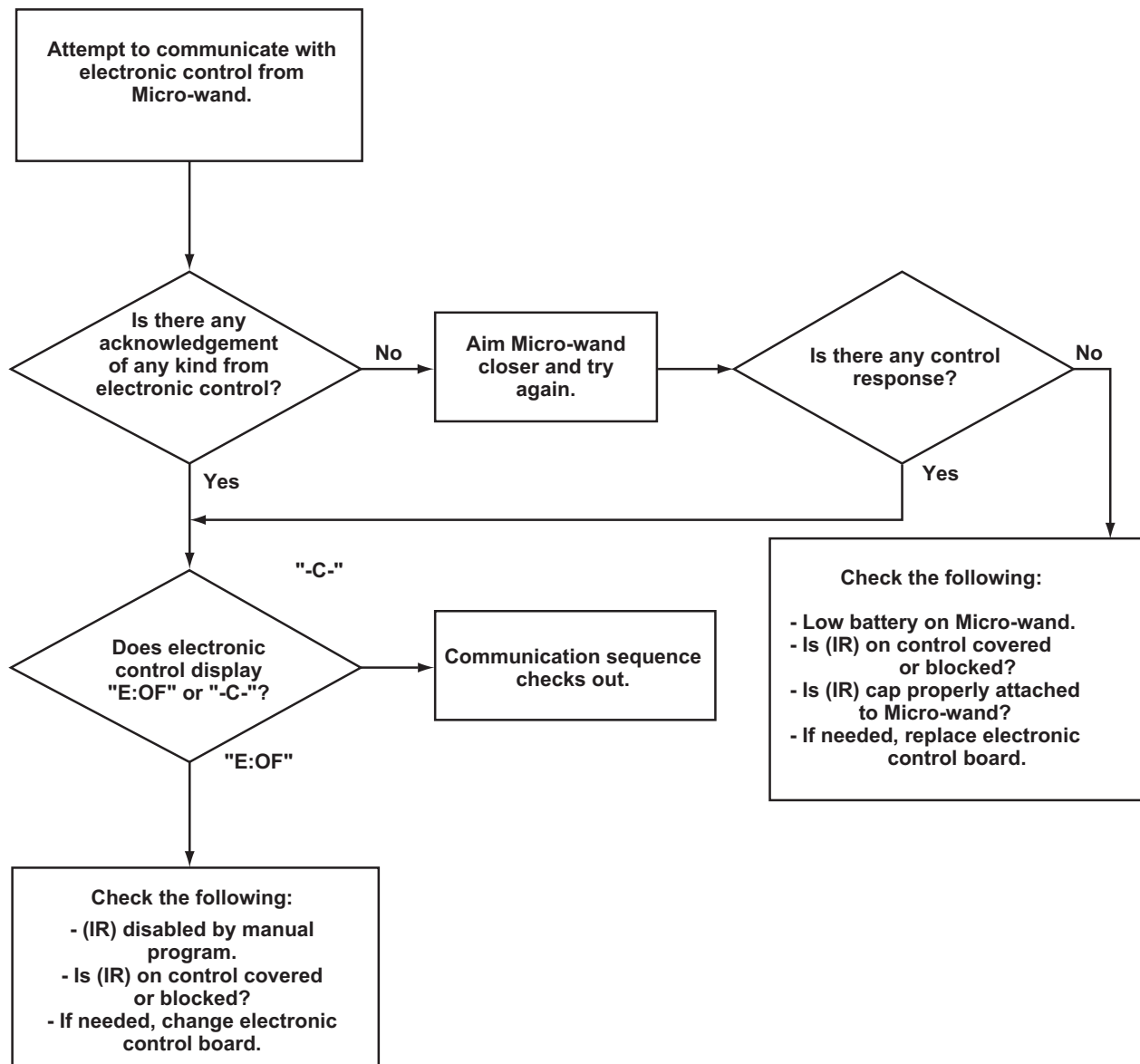
	<h3>WARNING</h3>
<p><b>To reduce the risk of electric shock, fire, explosion, serious injury or death:</b></p> <ul style="list-style-type: none"> <li>• <b>Disconnect electric power to the washer before servicing.</b></li> <li>• <b>Never start the washer with any guards/panels removed.</b></li> <li>• <b>Whenever ground wires are removed during servicing, these ground wires must be reconnected to ensure that the washer is properly grounded.</b></li> </ul>	
<small>W003</small>	

### 6. EDC ERROR CODE LISTING

<b>E:df</b>	Drive failure.	This error code is generated by the motor control and transmitted to the master control. Several conditions can cause this code; motor unplugged, motor failure (refer to <i>Paragraph 5</i> ), tachometer circuit open, inner basket locked up. This is a fatal error. Machine must be unpowered to reset.
<b>E:SP</b>	Serial communication error.	This error code occurs when the master control cannot communicate with the motor control. The master control will try to reset the motor control by powering it down. It will try resetting three times before setting the error code. Common causes: transformer unplugged or defective, wiring to motor control incorrect. This is a fatal error.
<b>E:FL</b>	Fill error.	This error code occurs if the pressure switch fails to open in 30 minutes in any fill/agitate cycle. This is a fatal error.
<b>dor</b>	Door Open Indicator.	This error code occurs when the door is not closed at the start of an active cycle. If the door is closed, check for wiring or door switches.
<b>E:do</b>	Door open error.	This error code occurs if the control detects the door open and door locked inputs high at the same time. You can get this error if you jerk on the door when it is locked or as it is about to lock. This is a fatal error.
<b>E:dL</b>	Door lock error.	This error code occurs if the door does not lock in 15 seconds or unlock in 3 minutes at the end of the cycle. This is a non-fatal error. If the door locks or unlocks while E:dL is displayed it will clear the error condition. Also if the door is opened after failing to lock it will clear the display.

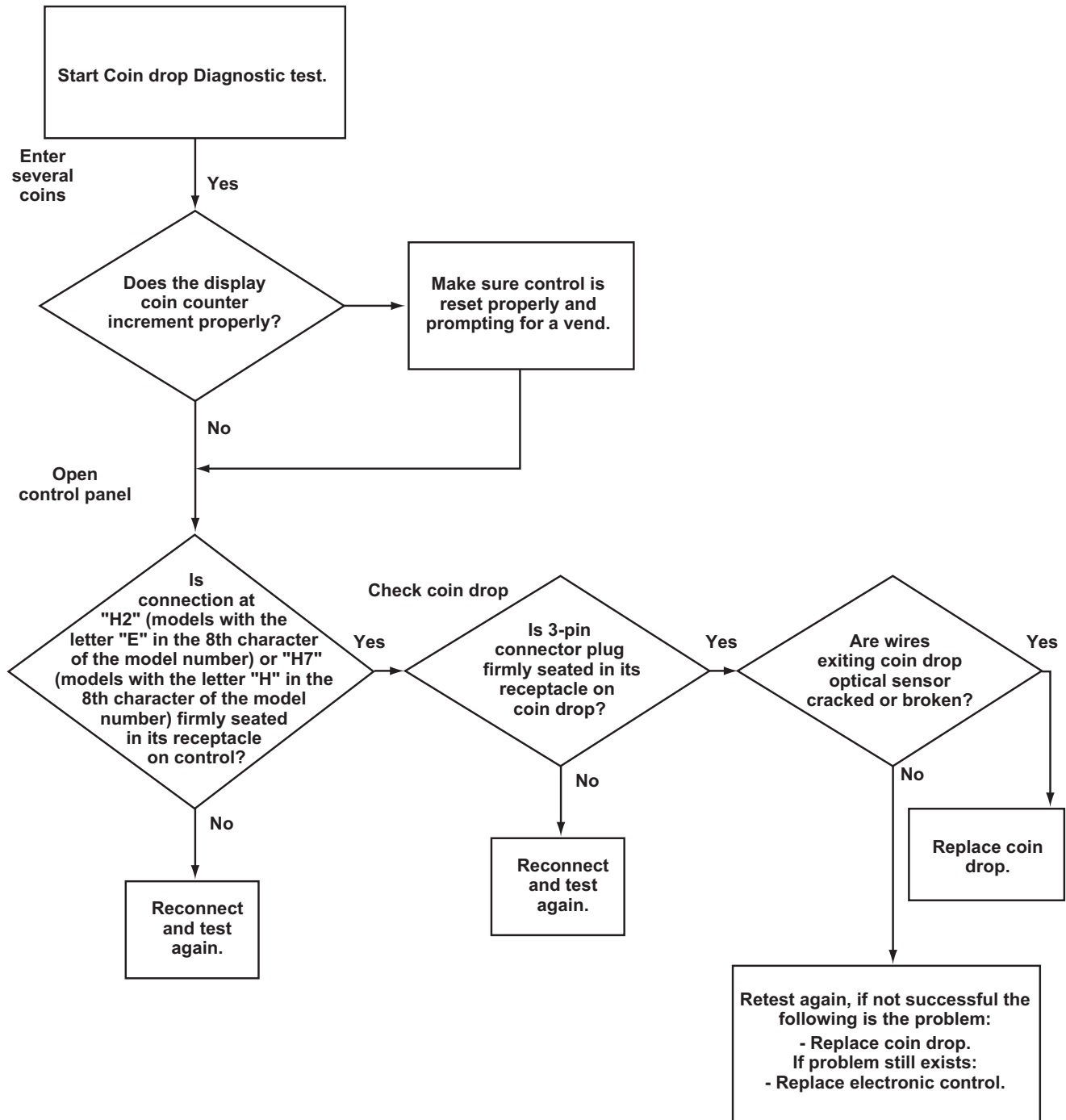
**NOTE: If replacing an inoperative electronic control due to burnt pin(s) on the 6-pin wire harness connector block, it may be due to damaged terminals in the harness connector. Damaged terminals in the harness connector will appear burnt or show signs of heat discoloration on the connector block. Replace the control wire harness with the control to avoid repeated damage.**

## 7. CANNOT PERFORM INFRARED COMMUNICATION



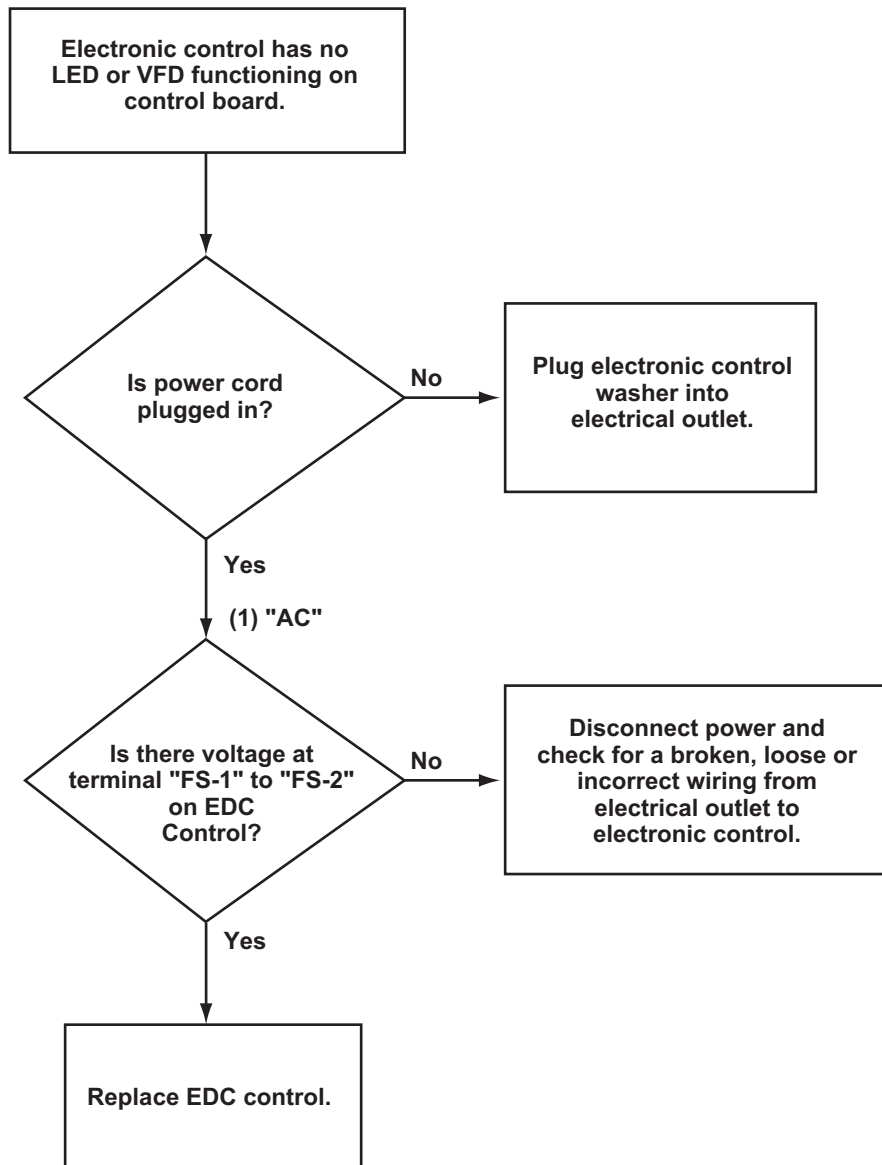
H130S

# 8. COINS IGNORED WHEN ENTERED



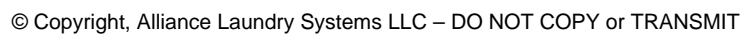
H131SE3B

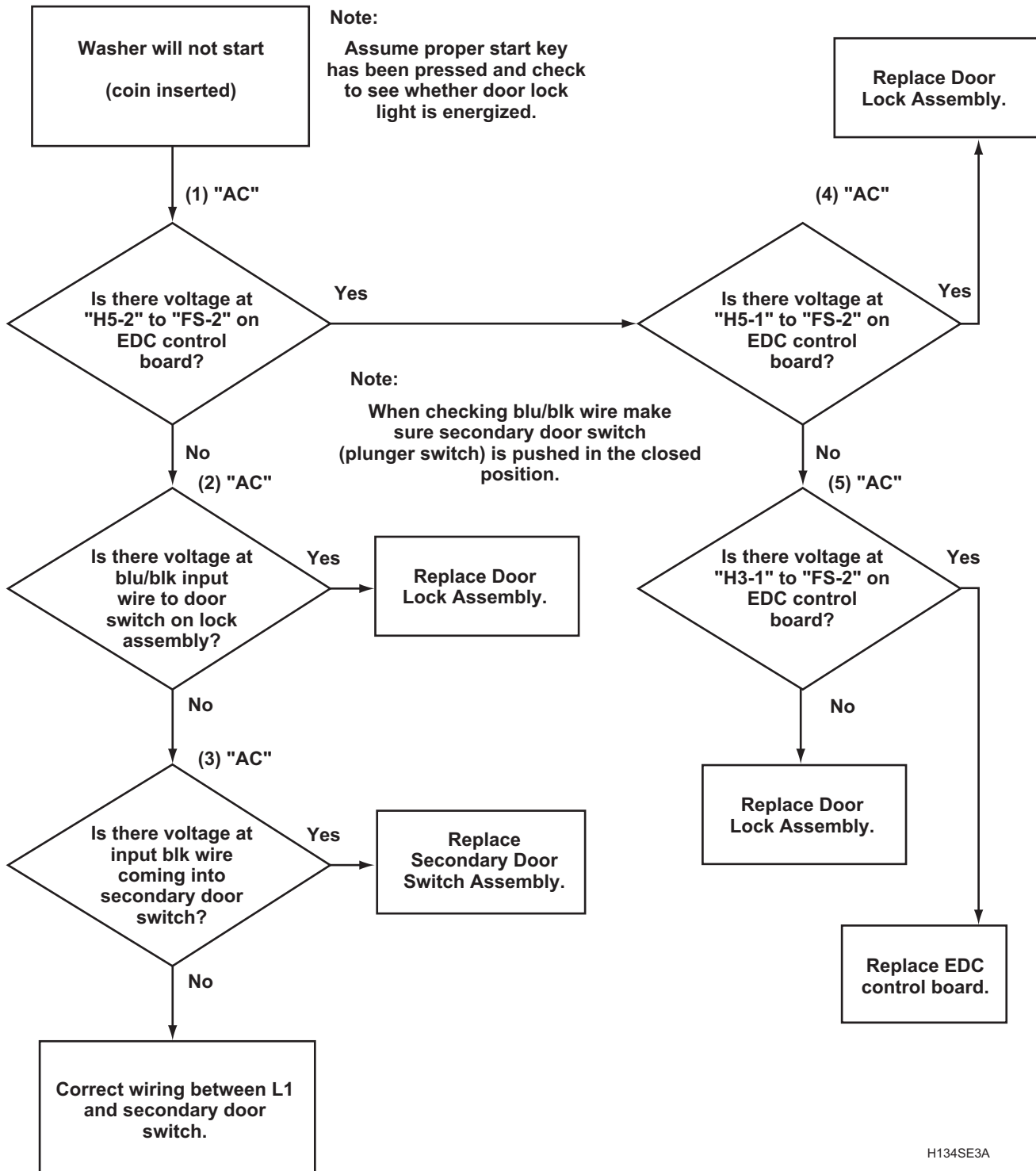


**9. ELECTRONIC CONTROL HAS NO VISIBLE DISPLAY – WASHER**

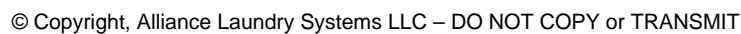
H132SE3A

## 24

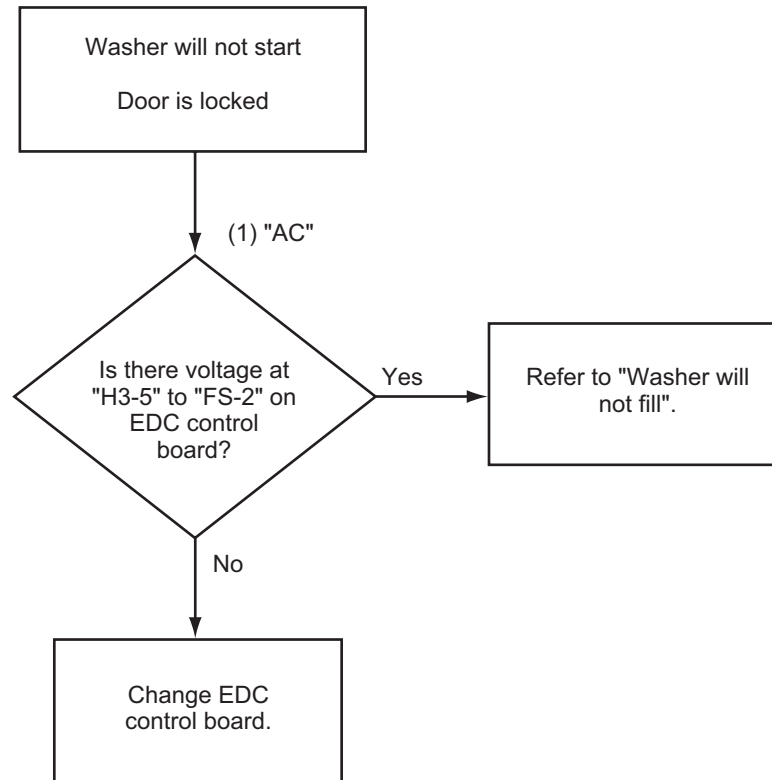


**10. WASHER WILL NOT START (DOOR AND DOOR LOCK SWITCH) – NO DOOR LOCK ONLY**

## 26

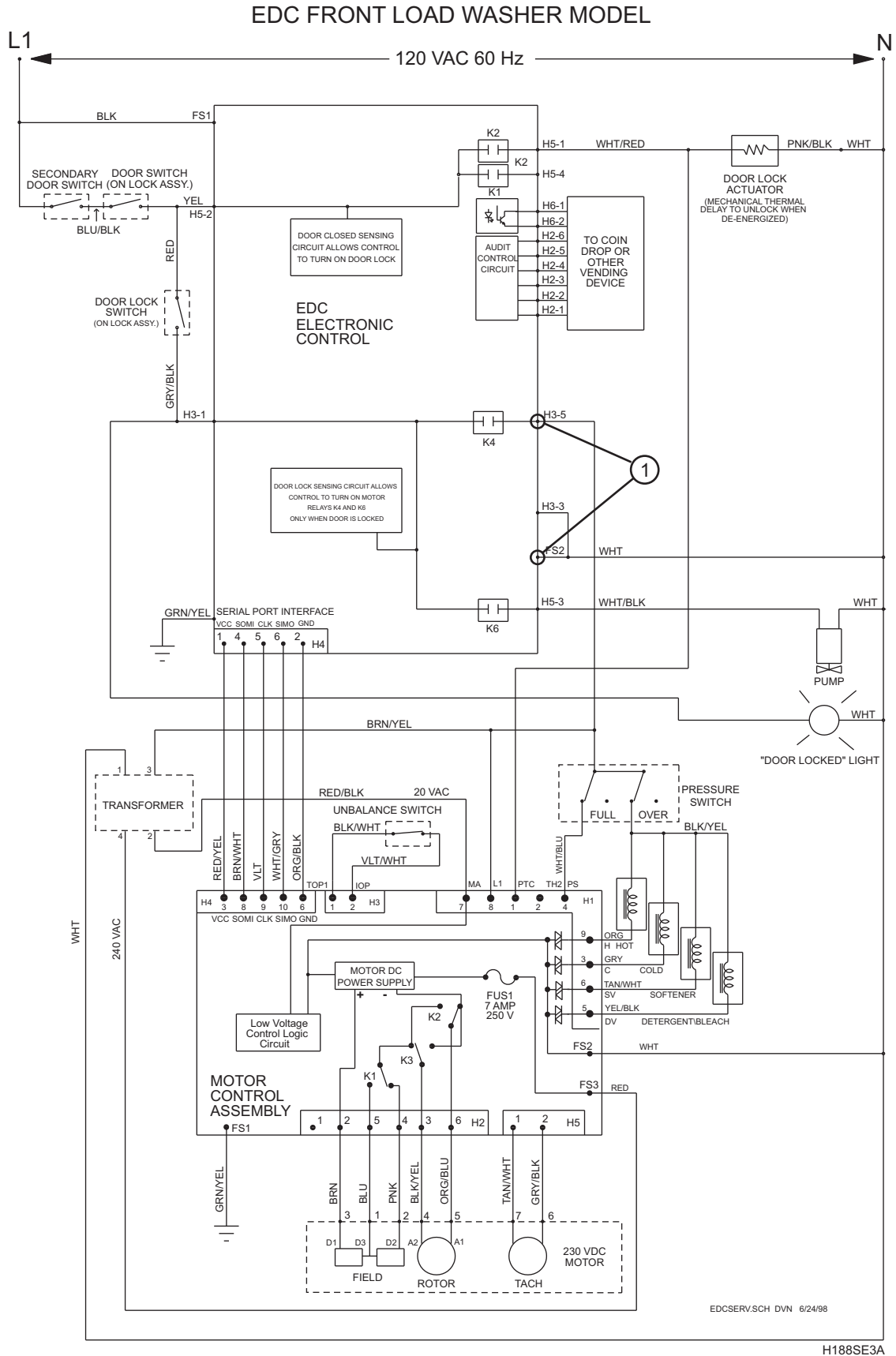


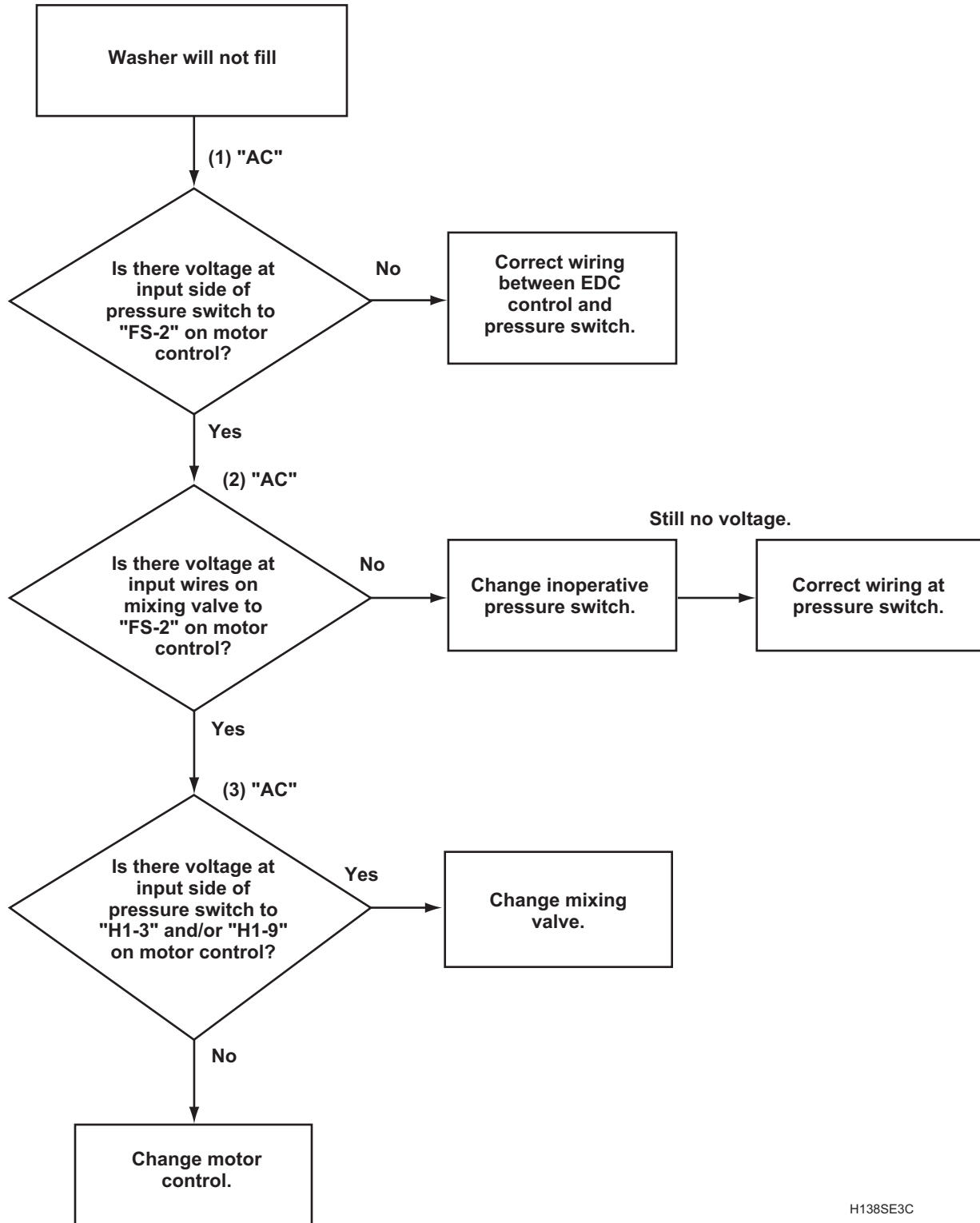
# 11. WASHER WILL NOT START (EDC CONTROL ANALYSIS)



H136SE3A

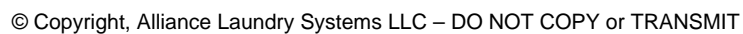
## Section 3 Troubleshooting (EDC Models)



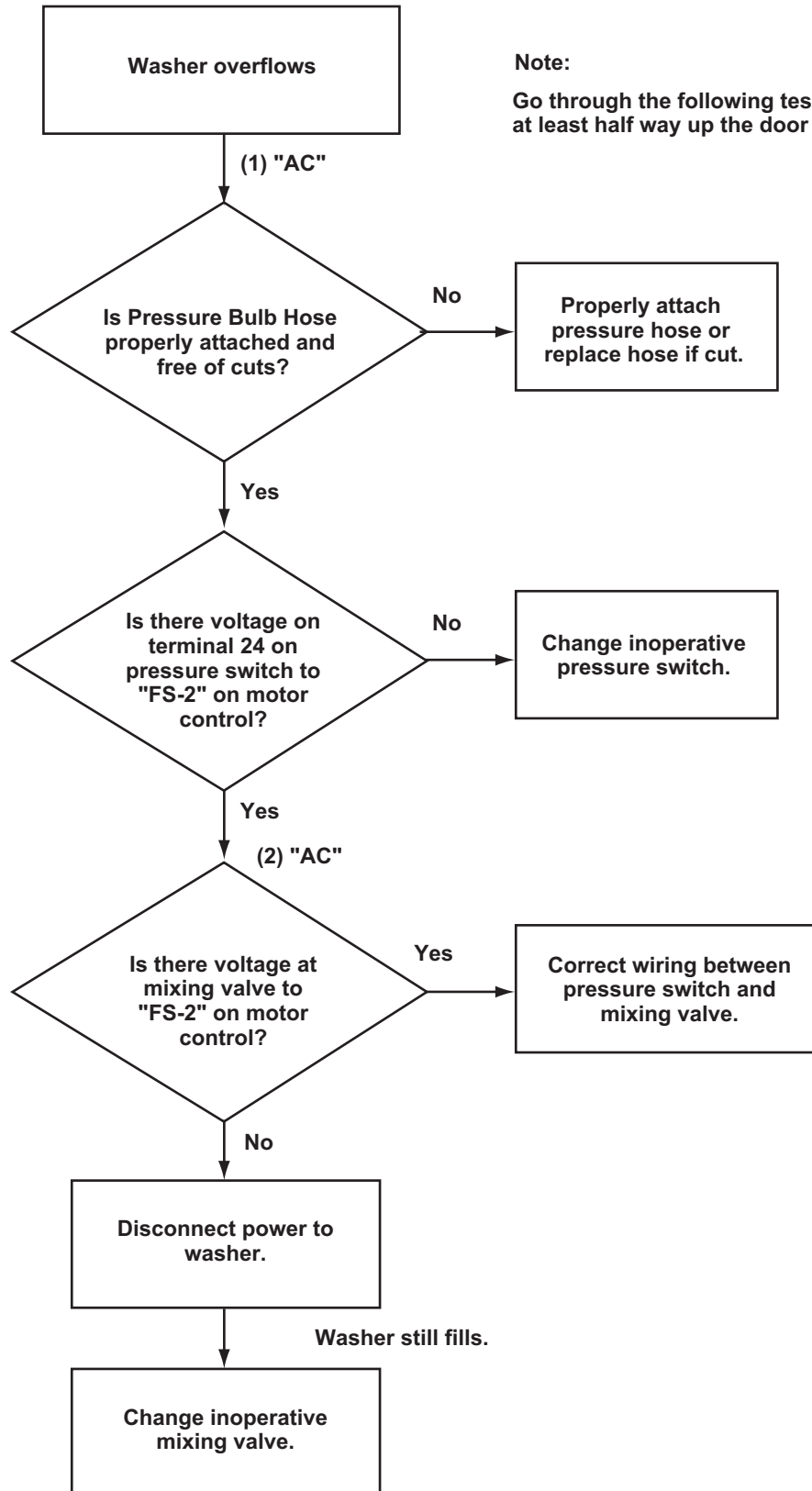
**12. WASHER WILL NOT FILL**

H138SE3C

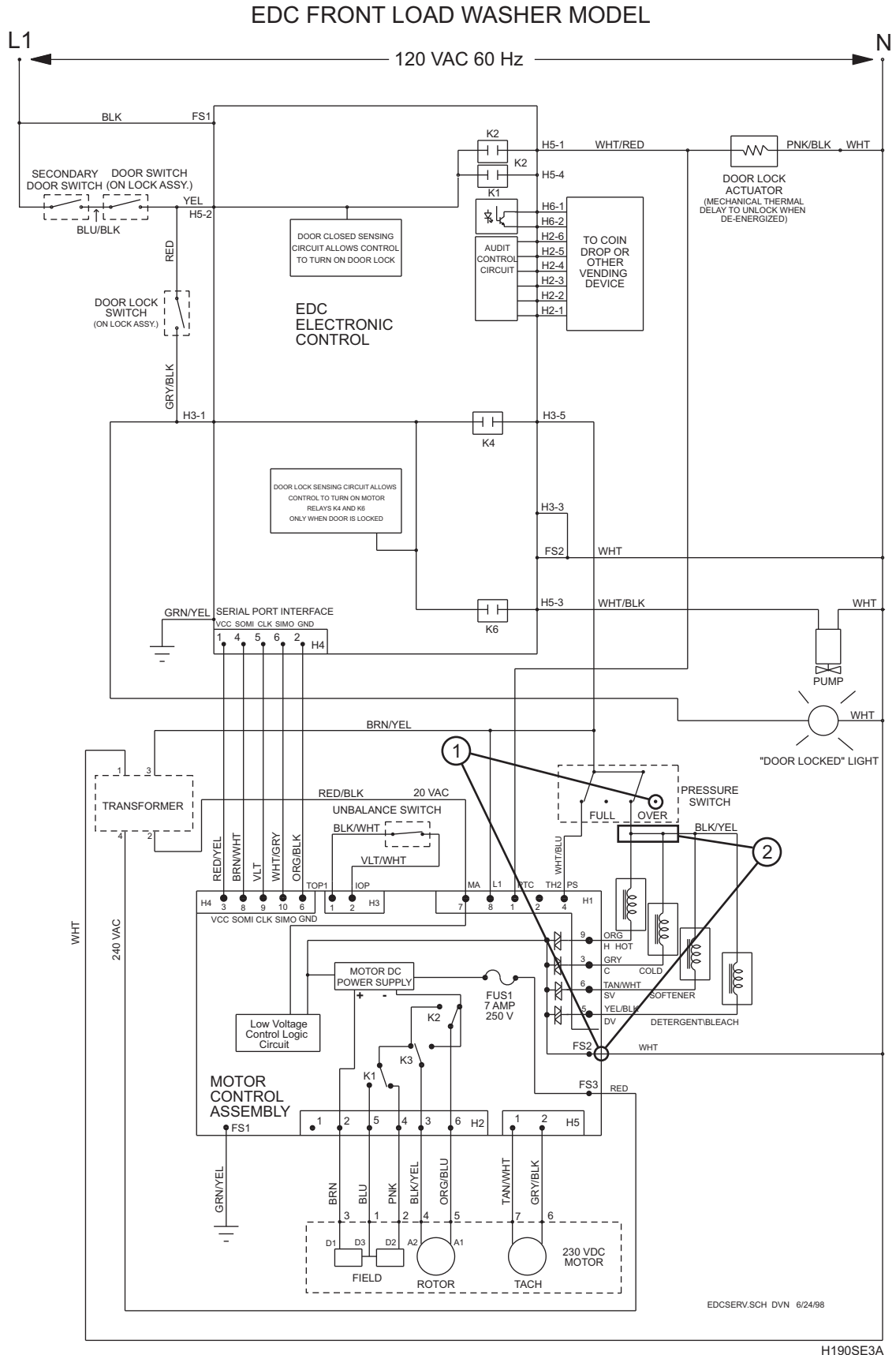
## 30

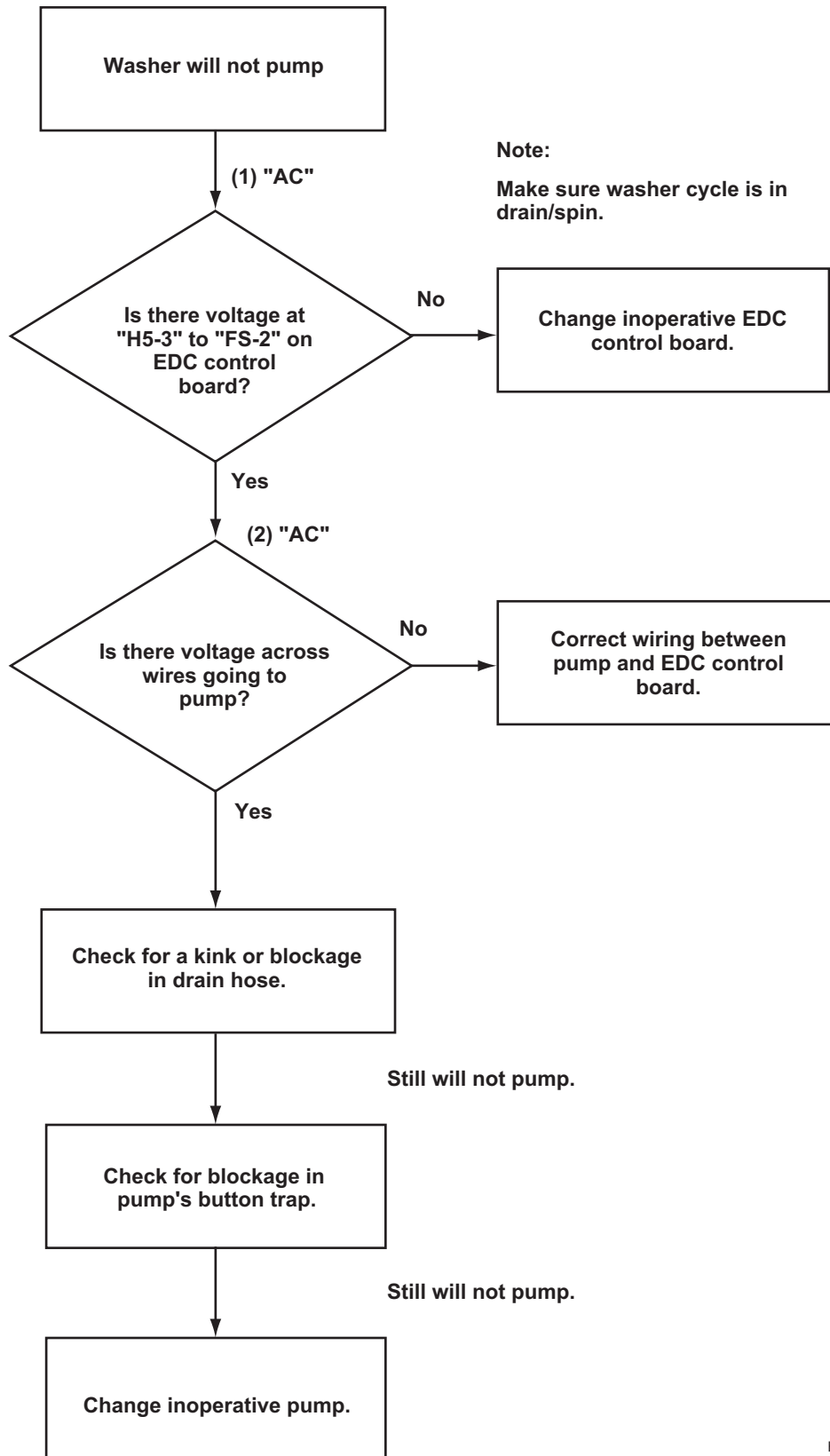




**13. WASHER OVERFLOWS**

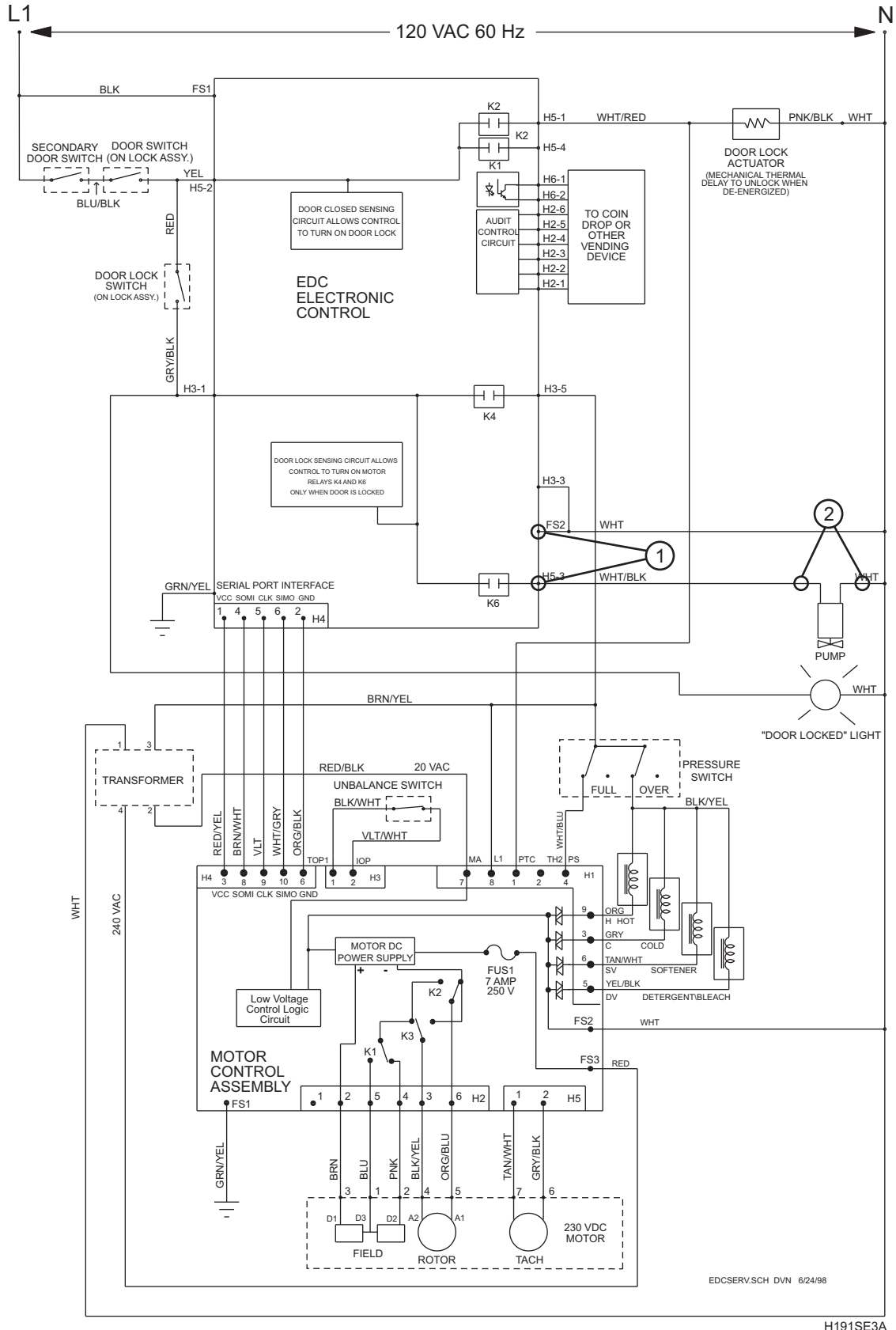
H140SE3B



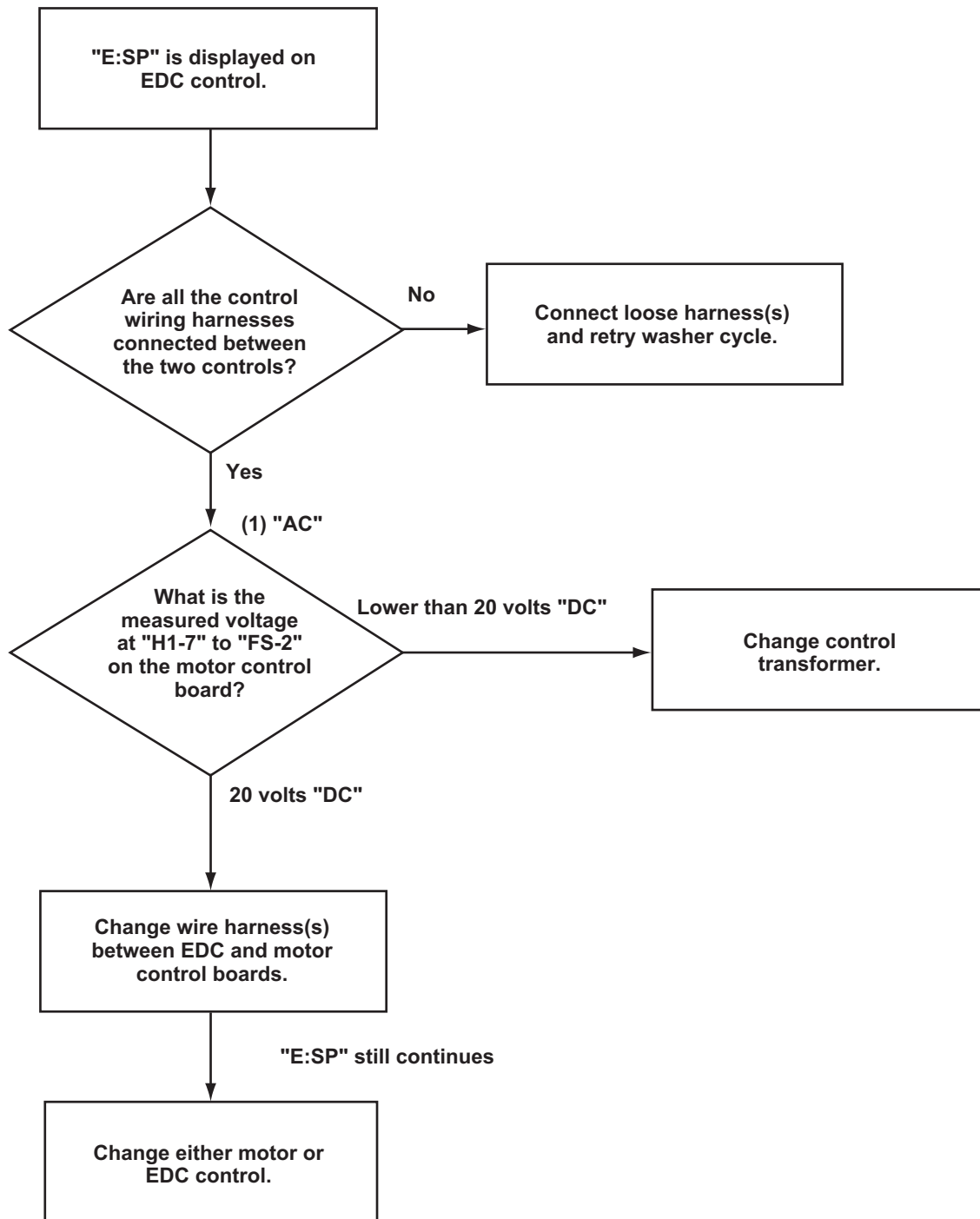
**14. WASHER WILL NOT PUMP**

H142SE3B

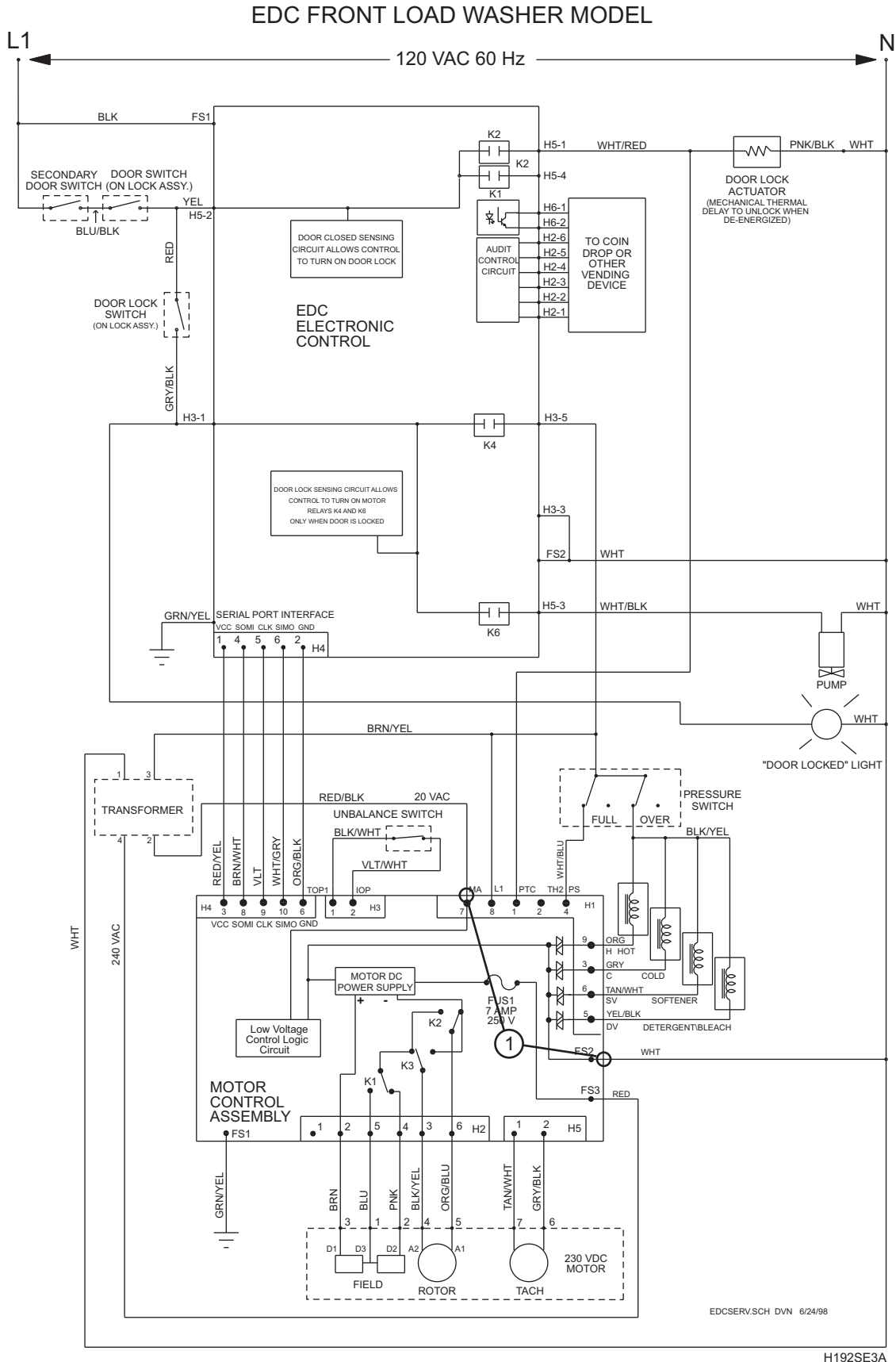
# EDC FRONT LOAD WASHER MODEL



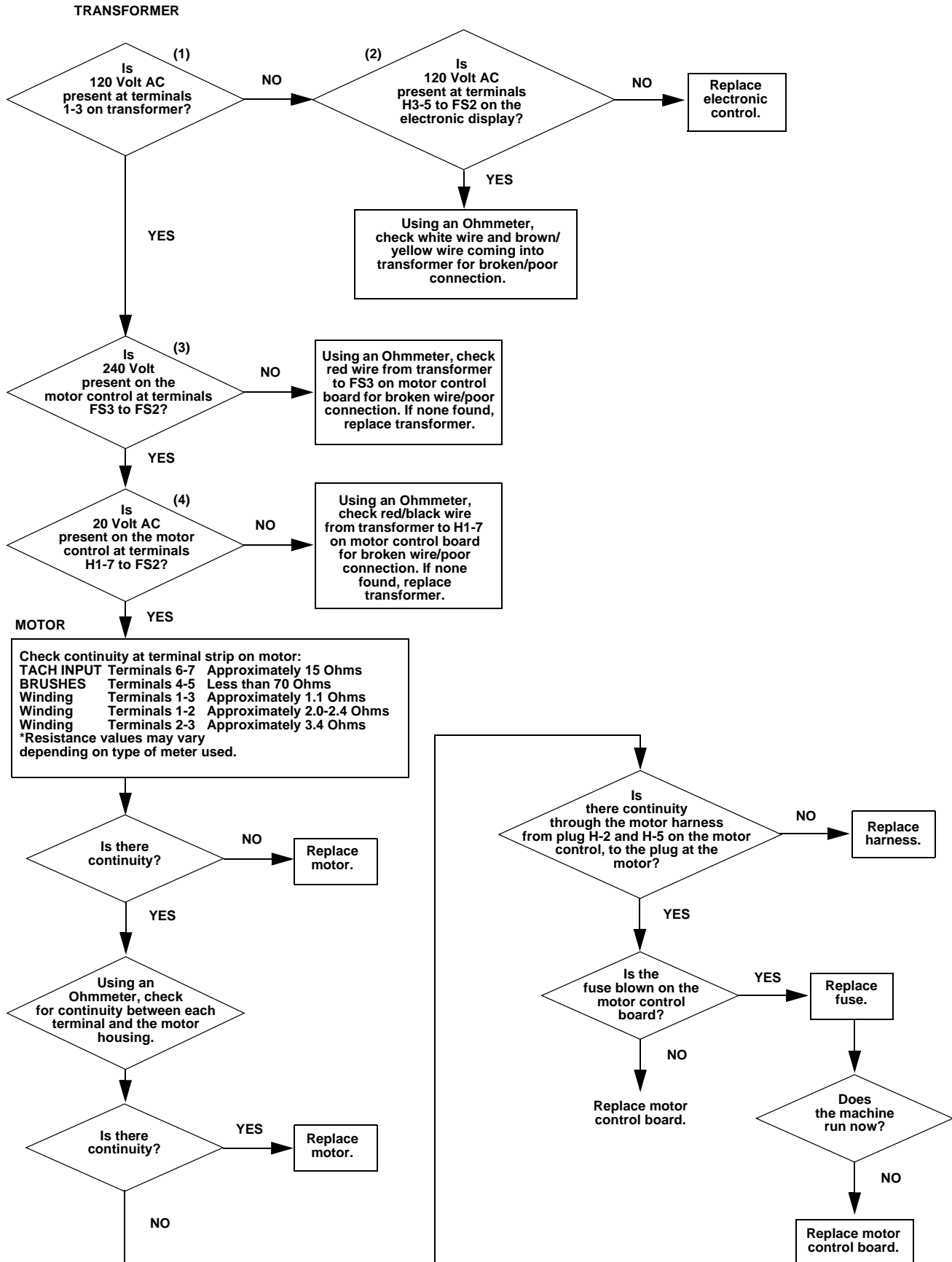
## 15. "E:SP" ERROR ANALYSIS



H144SE3A



## 16. DOOR LOCKED, MOTOR DOES NOT RUN (E:DF ON DISPLAY)



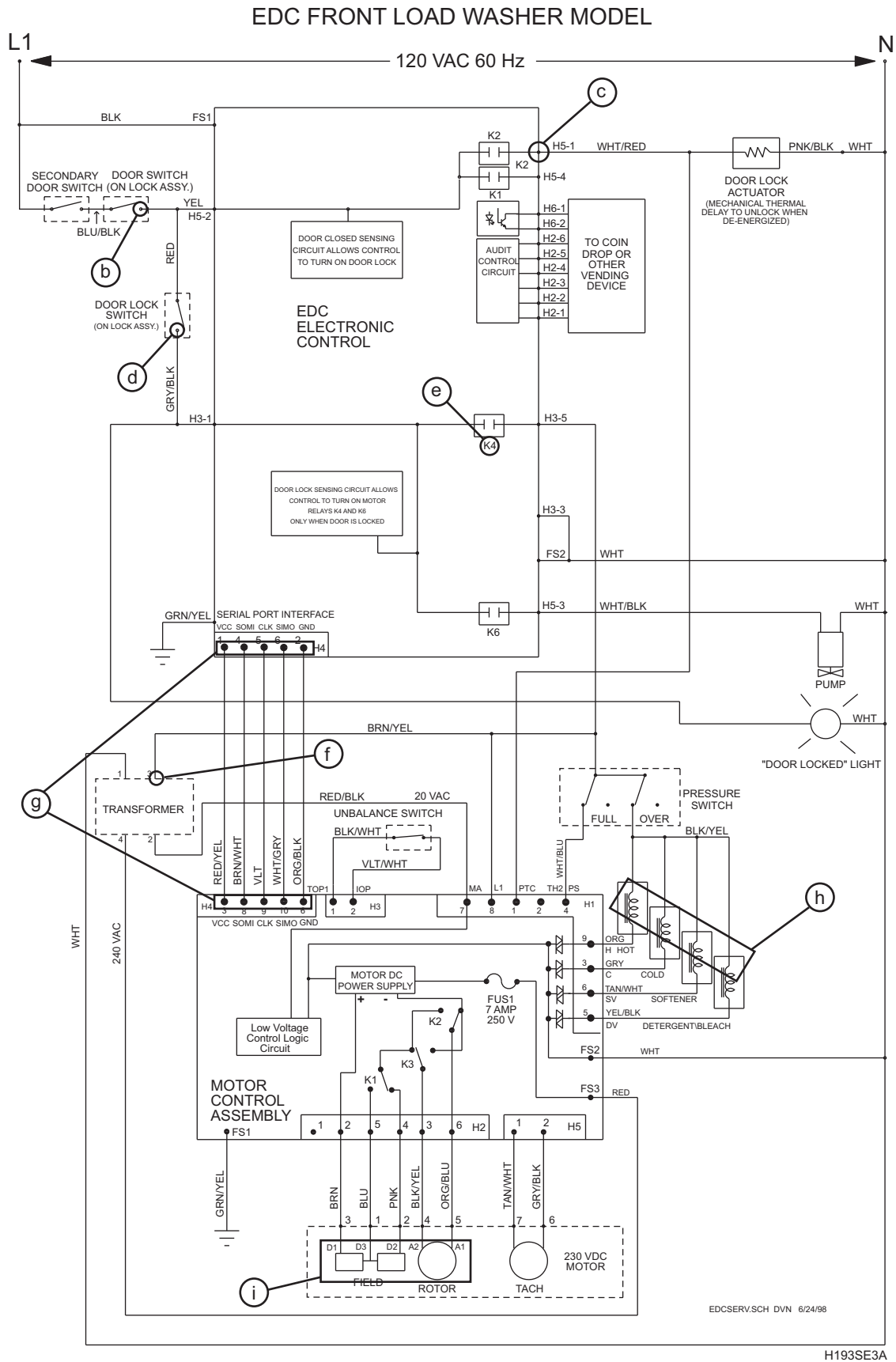
### DOOR LOCKED, MOTOR DOES NOT RUN (E:DF ON DISPLAY)





## 17. START UP SEQUENCE

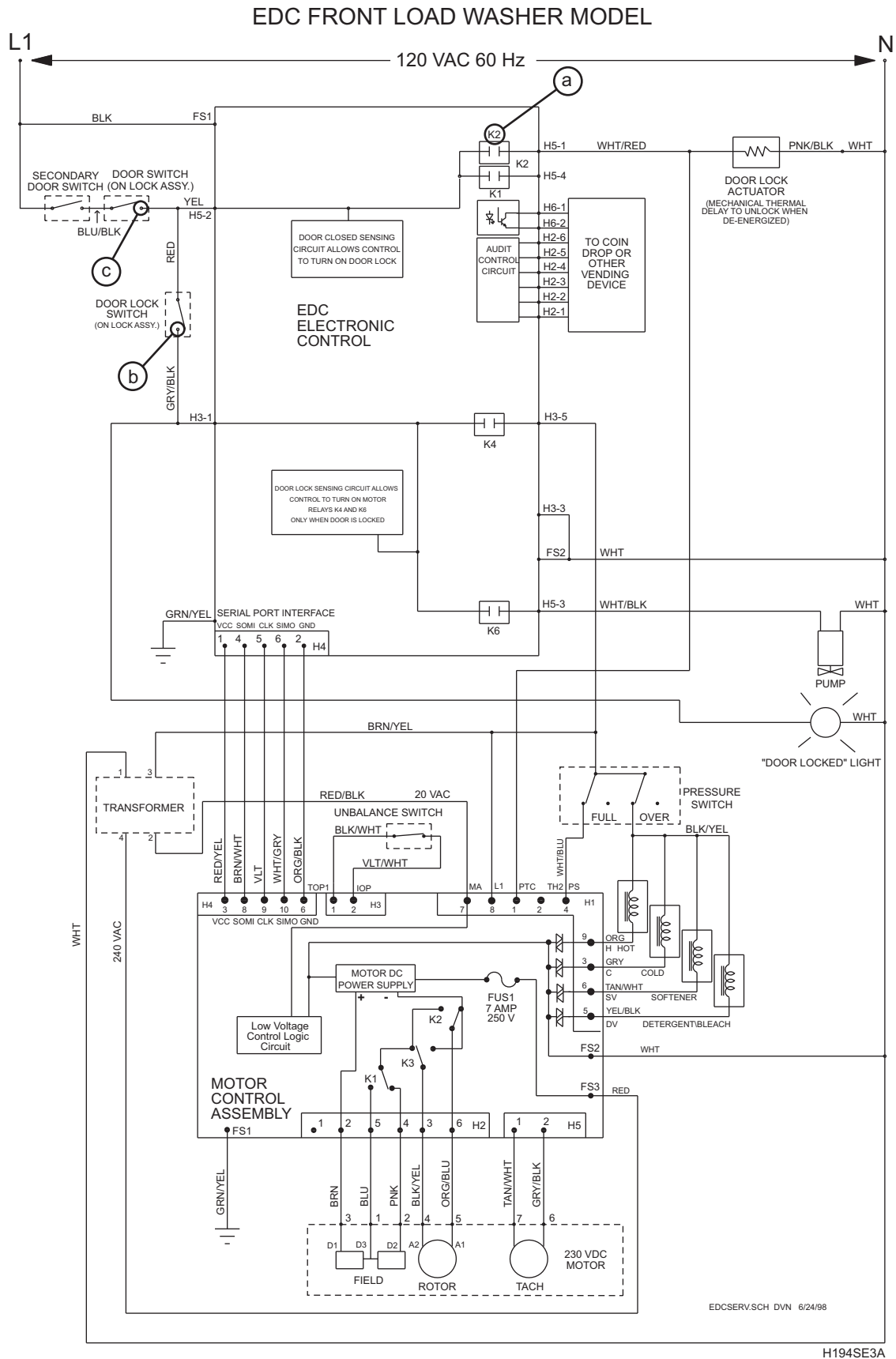
- a. Insert money and/or card and push the button next to the flashing light.
- b. Both door closed switches need to be in the closed position, after vend price has been satisfied.
- c. The door lock actuator is energized from “H5-1” terminal on EDC control board.
- d. The door lock switch is closed.
- e. The “K4” relay is closed on EDC control board.
- f. The control transformer is energized.
- g. Communications begin between EDC and motor control boards through the SPI lines to the optoisolators on EDC control.
- h. The mixing valve is energized and washer begins to fill.
- i. The main drive motor is powered to start inner basket rotating.



**18. SHUT DOWN SEQUENCE**

- a. Towards end of cycle, “:01” is on display. The door lock actuator is powered down and “K2” relay on EDC control is opened.
- b. The door lock switch is opened after a one-minute delay. The display will show “:00”.
- c. The door switches will open when loading door opens.


## Section 3 Troubleshooting (EDC Models)



## Notes

[illegible]

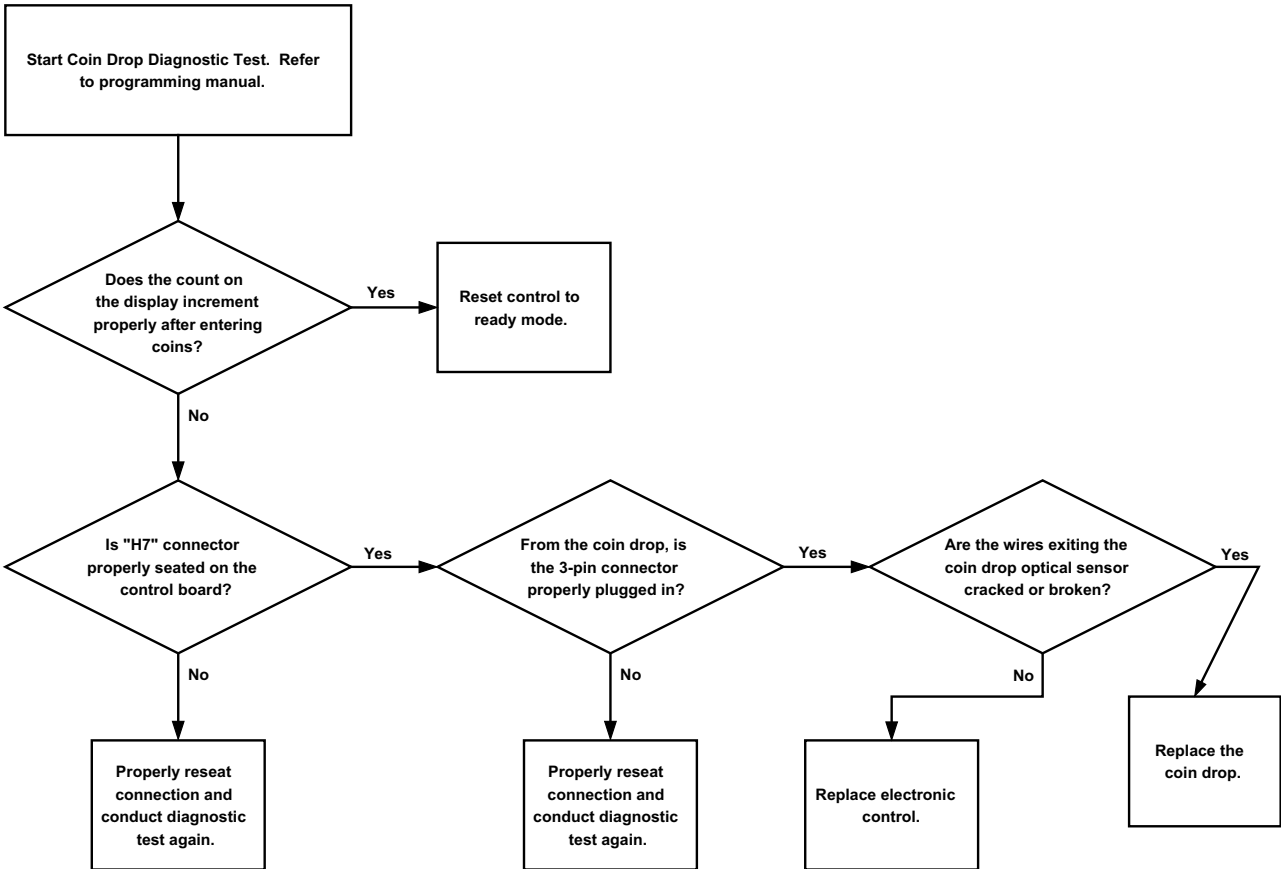
## MDC Models

	WARNING
<p><b>To reduce the risk of electric shock, fire, explosion, serious injury or death:</b></p> <ul style="list-style-type: none"> <li>Disconnect electric power to the washer before servicing.</li> <li>Never start the washer with any guards/panels removed.</li> <li>Whenever ground wires are removed during servicing, these ground wires must be reconnected to ensure that the washer is properly grounded.</li> </ul>	
W003	

### 19. MDC ERROR CODE LISTING

<b>E:df</b>	Drive failure.	This error code is generated by the motor control and transmitted to the master control. Several conditions can cause this code; motor unplugged, motor failure (refer to <i>Paragraph 5</i> ), tachometer circuit open, inner basket locked up. This is a fatal error. Machine must be unpowered to reset.
<b>E:SP</b>	Serial communication error.	This error code occurs when the master control cannot communicate with the motor control. The master control will try to reset the motor control by powering it down. It will try resetting three times before setting the error code. Common causes include defective or unplugged transformer, and incorrect wiring to motor control. This is a fatal error.
<b>E:FL</b>	Fill error.	This error code occurs if the pressure switch fails to open in 30 minutes in any fill/agitate cycle. This is a fatal error.
<b>dor</b>	Door Open Indicator.	This error code occurs when the door is not closed at the start of an active cycle. If the door is closed, check for wiring or door switches.
<b>E:do</b>	Door open error.	This error code occurs if the control detects the door open and door locked inputs high at the same time. You can get this error if you jerk on the door when it is locked or as it is about to lock. This is a fatal error.
<b>E:dL</b>	Door lock error.	This error code occurs if the door does not lock in 15 seconds or unlock in 3 minutes at the end of the cycle. This is a non-fatal error. If the door locks or unlocks while E:dL is displayed it will clear the error condition. Also, if the door is opened after failing to lock it will clear the display.

20. COINS IGNORED WHEN ENTERED



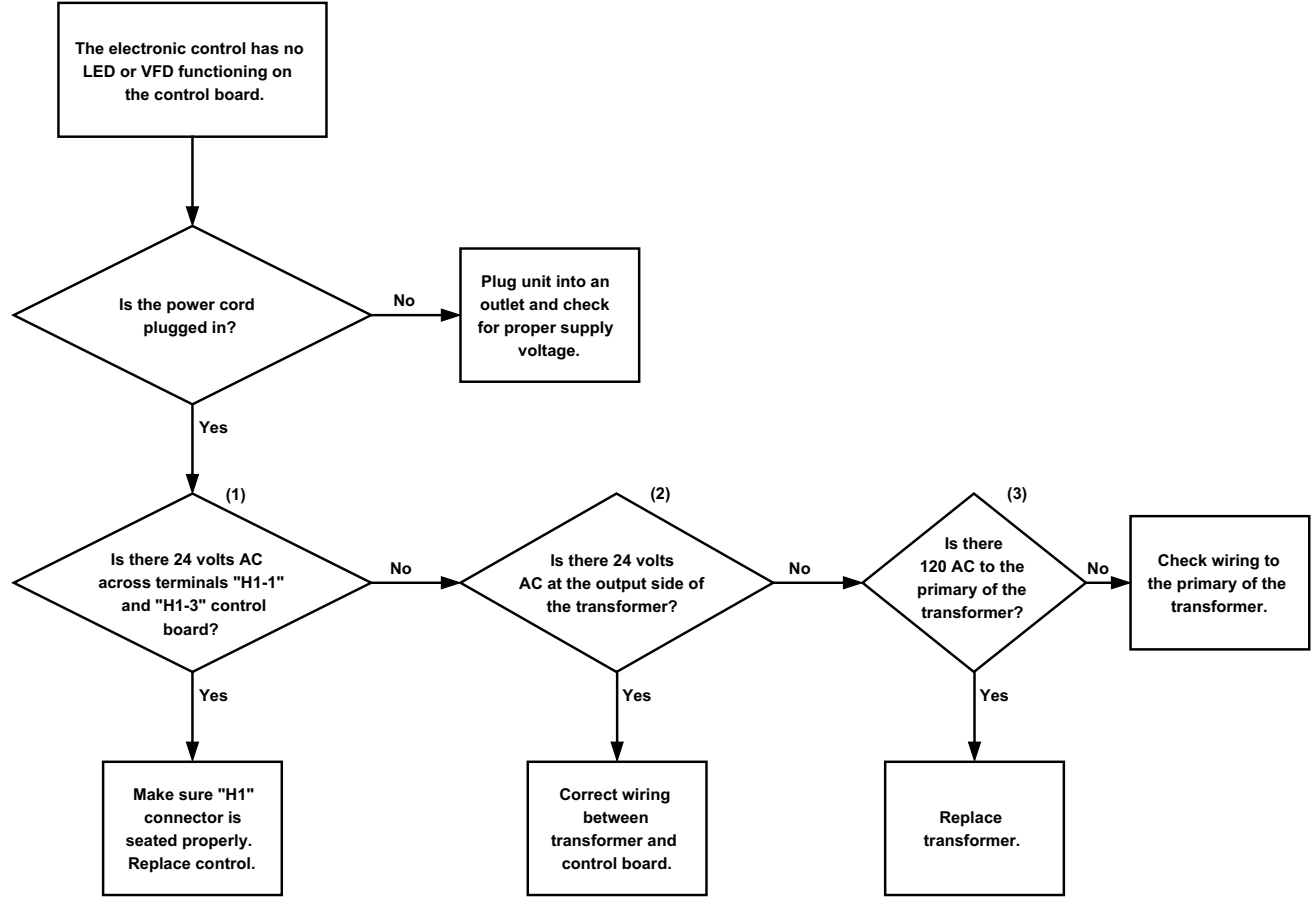
FLW297S

## Notes

[illegible]

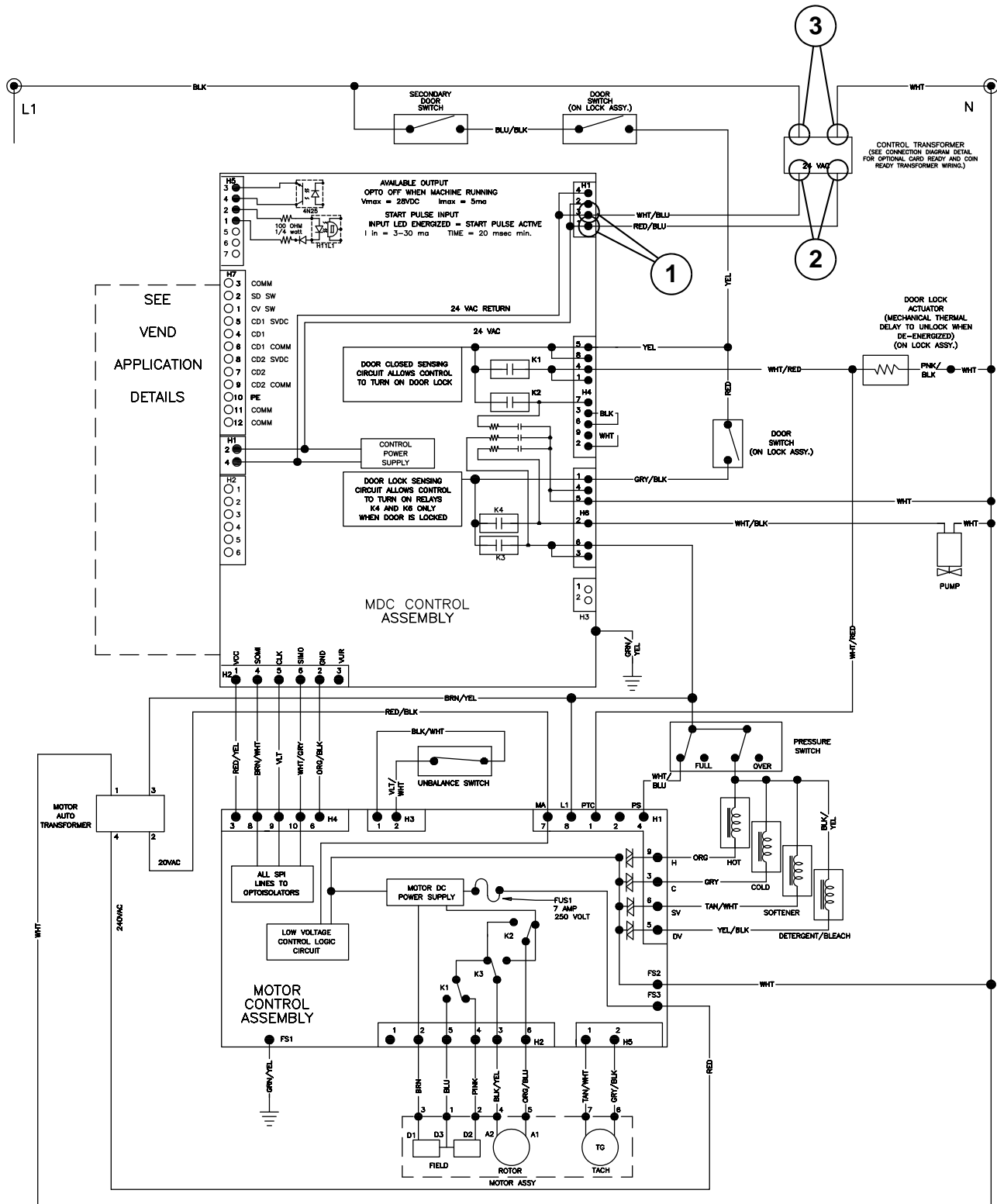


21. NO VISIBLE DISPLAY ON CONTROL



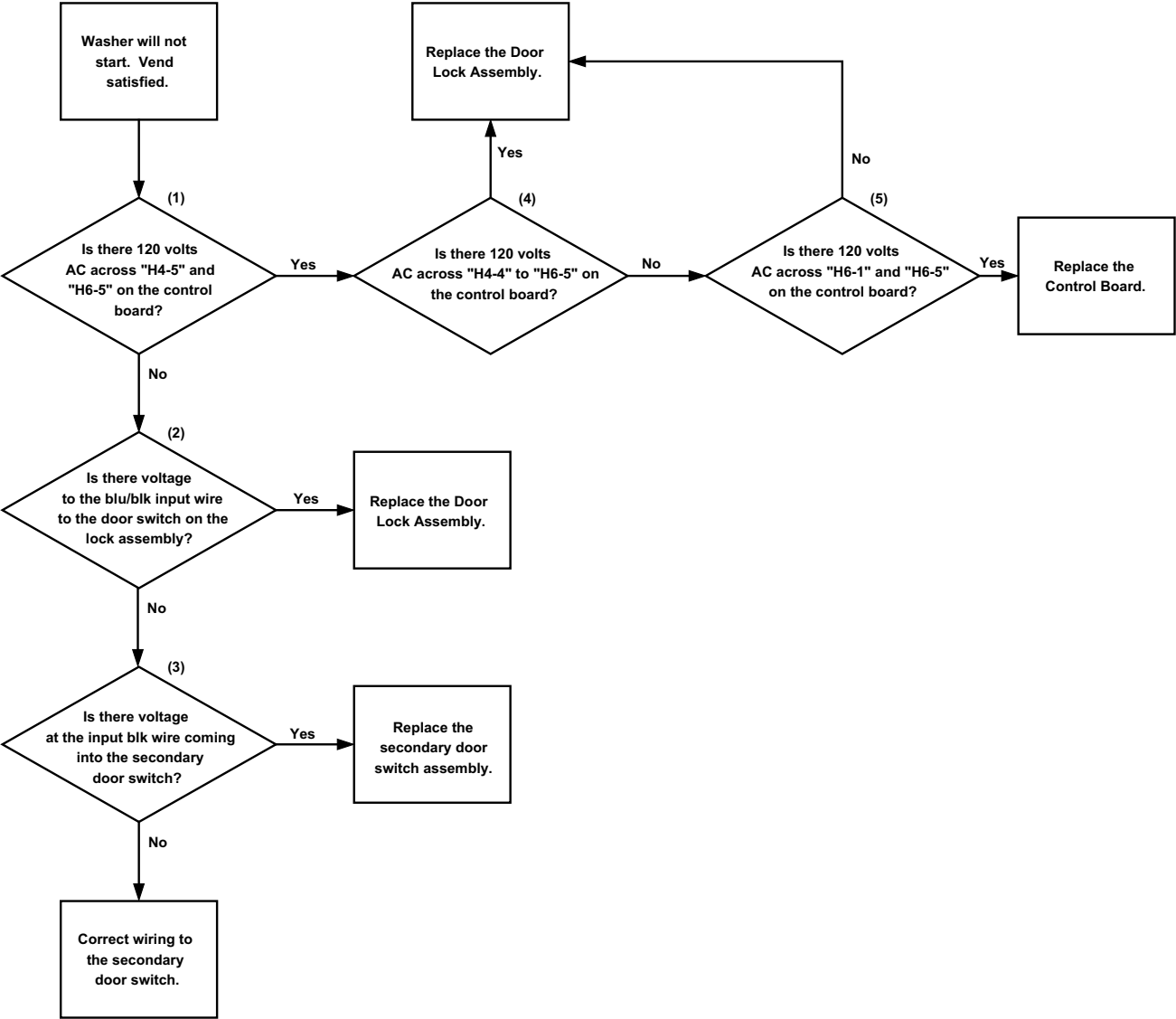
FLW298S

# NO VISIBLE DISPLAY ON CONTROL



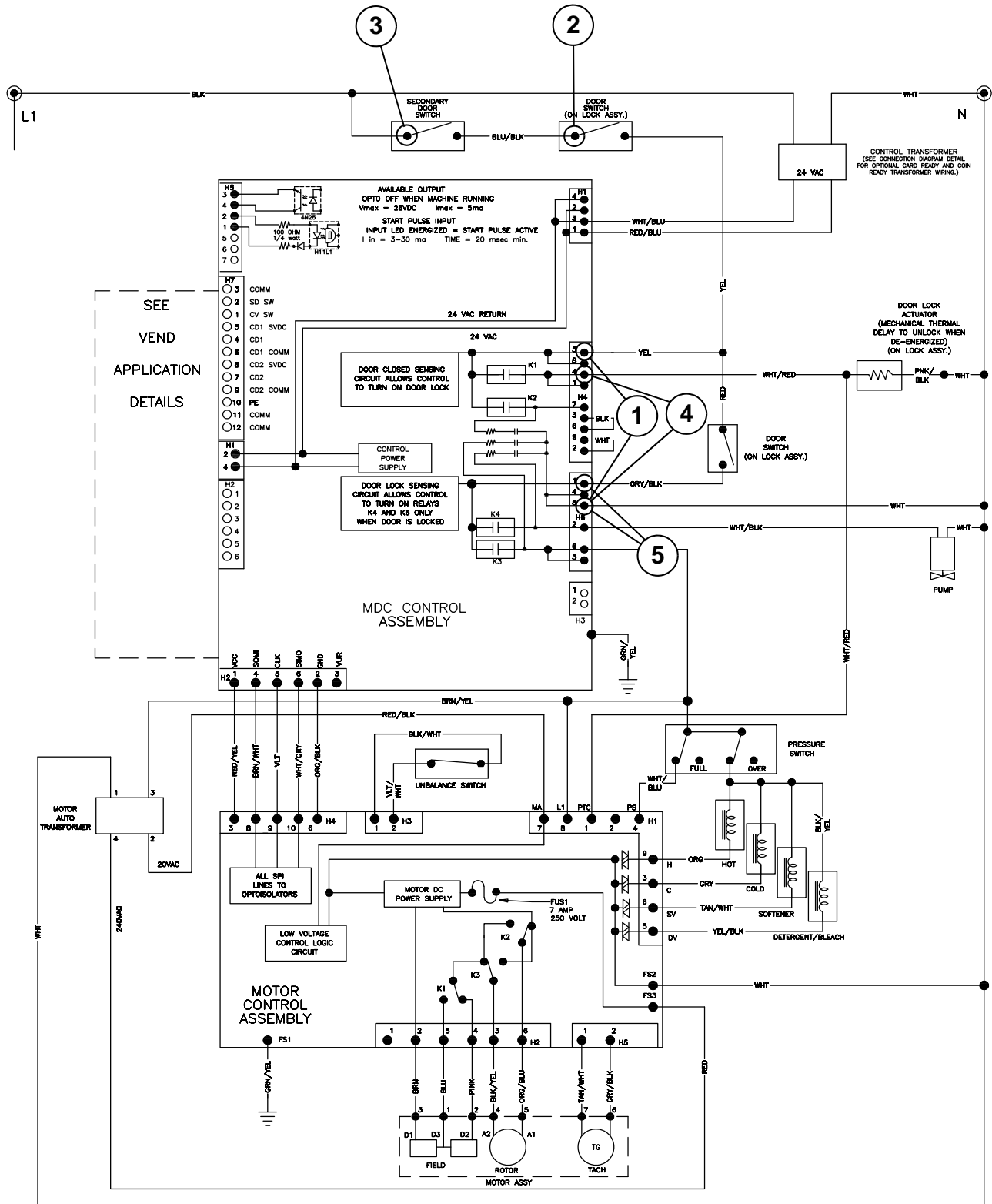
801182

22. WASHER WILL NOT START – NO DOOR LOCK



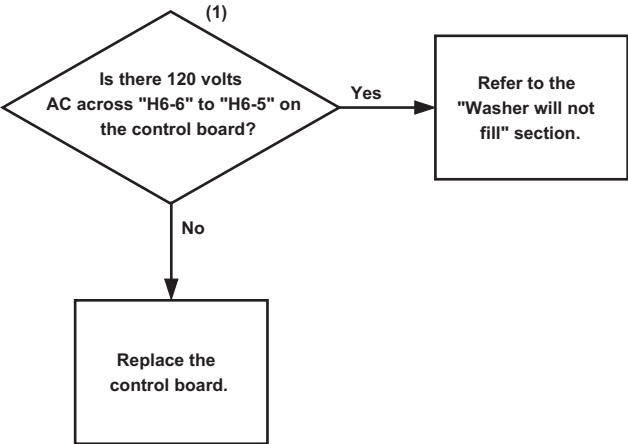
FLW300S

# WASHER WILL NOT START – NO DOOR LOCK



801182

23. WASHER WILL NOT START – CONTROL ANALYSIS

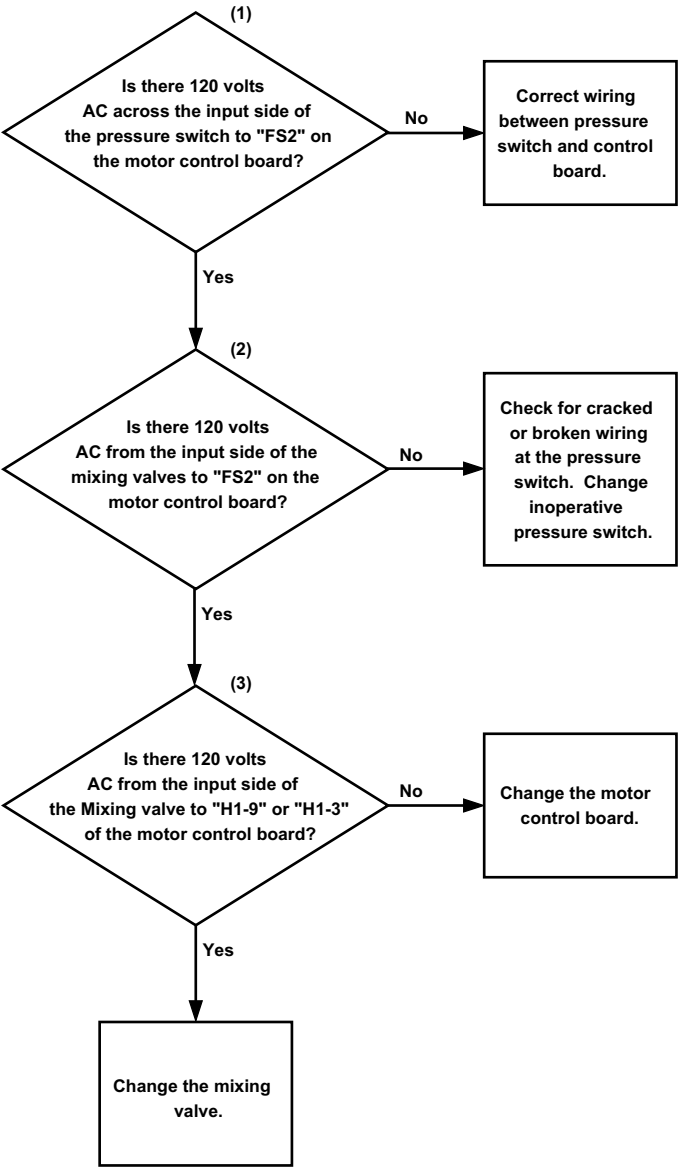


FLW302S

## WASHER WILL NOT START – CONTROL ANALYSIS

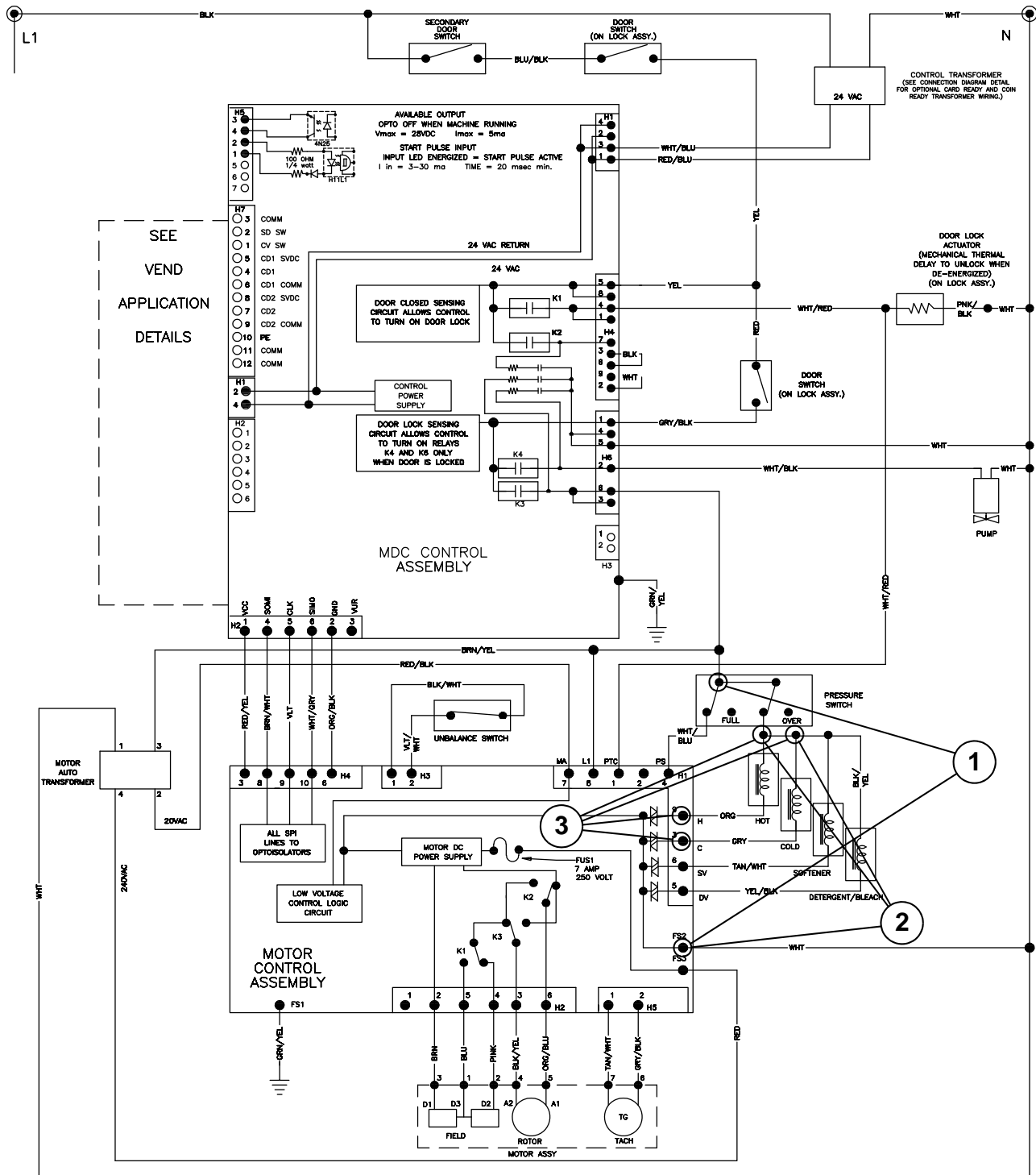


24. WASHER WILL NOT FILL



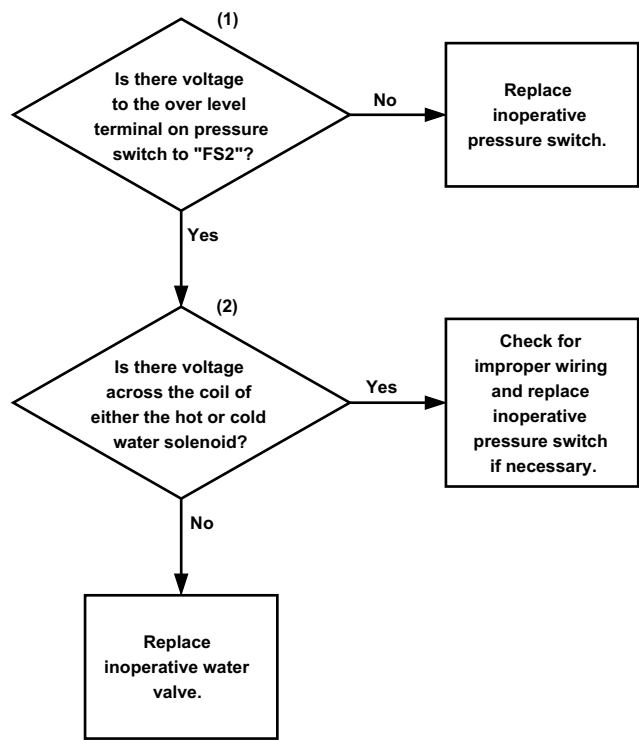
FLW304S

# WASHER WILL NOT FILL





25. WASHER OVERFLOWS

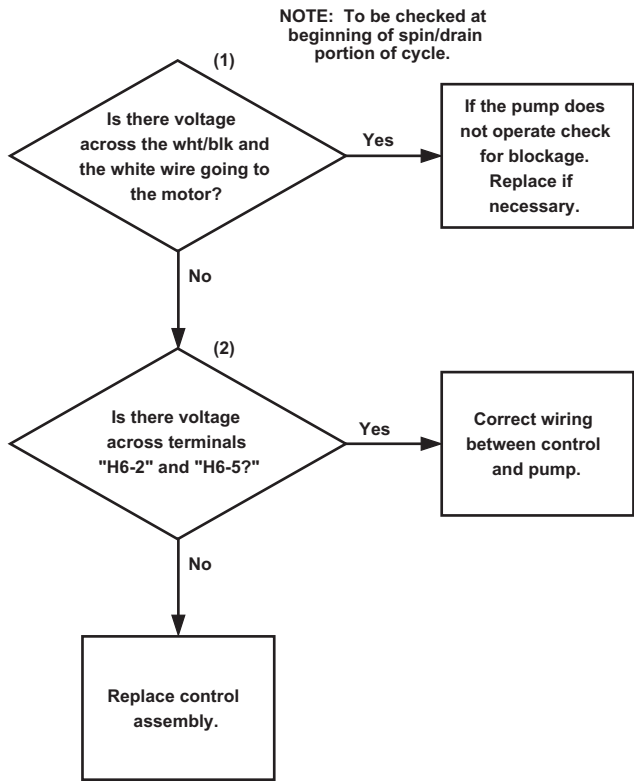


FLW306S

## WASHER OVERFLOWS



26. PUMP DOES NOT OPERATE

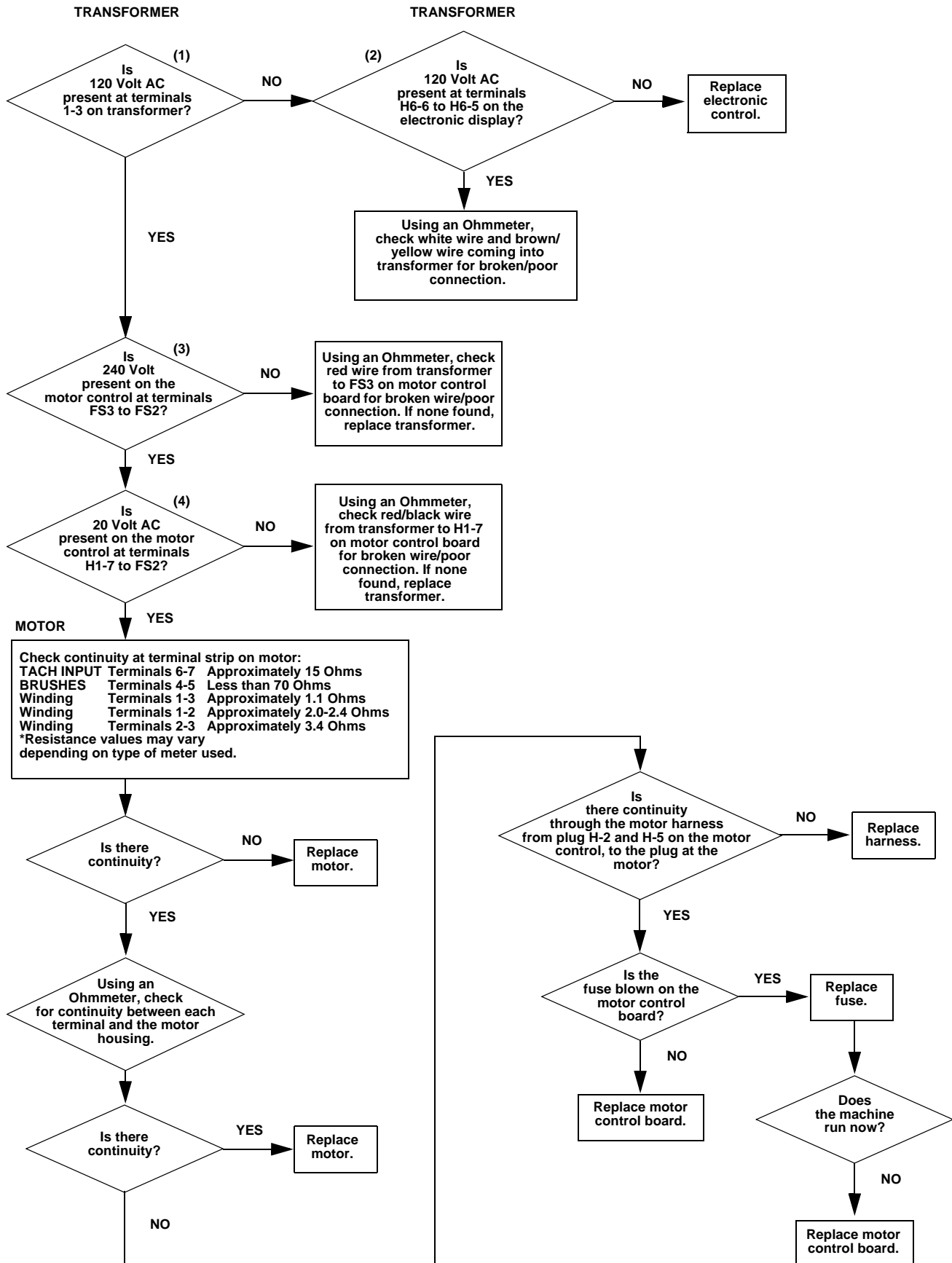


FLW308S

## PUMP DOES NOT OPERATE



## 27. DOOR LOCKED, MOTOR DOES NOT RUN (E:DF ON DISPLAY)



### DOOR LOCKED, MOTOR DOES NOT RUN (E:DF ON DISPLAY)



## Notes

[illegible]

## NetMaster Models



### WARNING

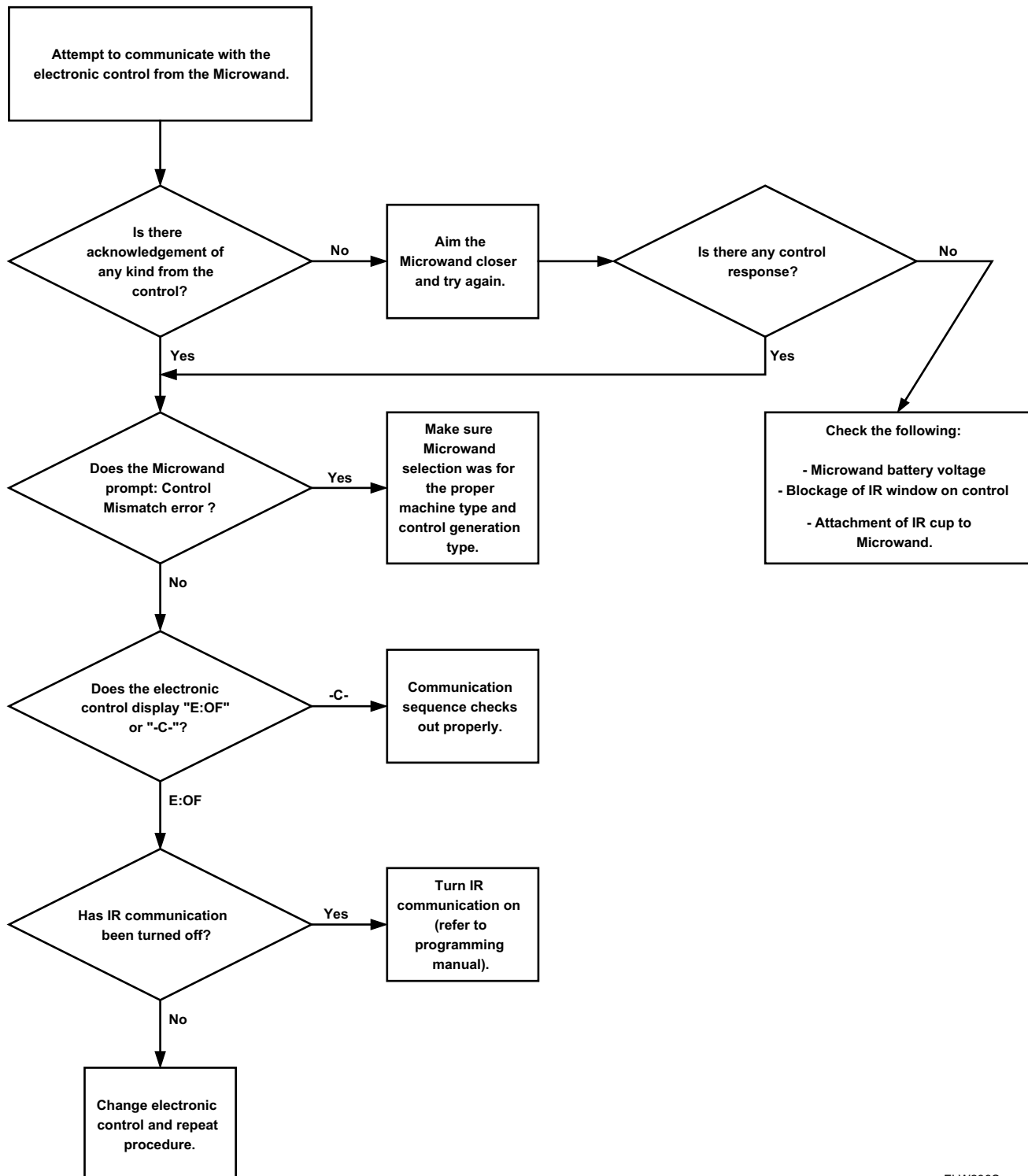
To reduce the risk of electric shock, fire, explosion, serious injury or death:

- Disconnect electric power to the washer before servicing.
- Never start the washer with any guards/panels removed.
- Whenever ground wires are removed during servicing, these ground wires must be reconnected to ensure that the washer is properly grounded.

W003

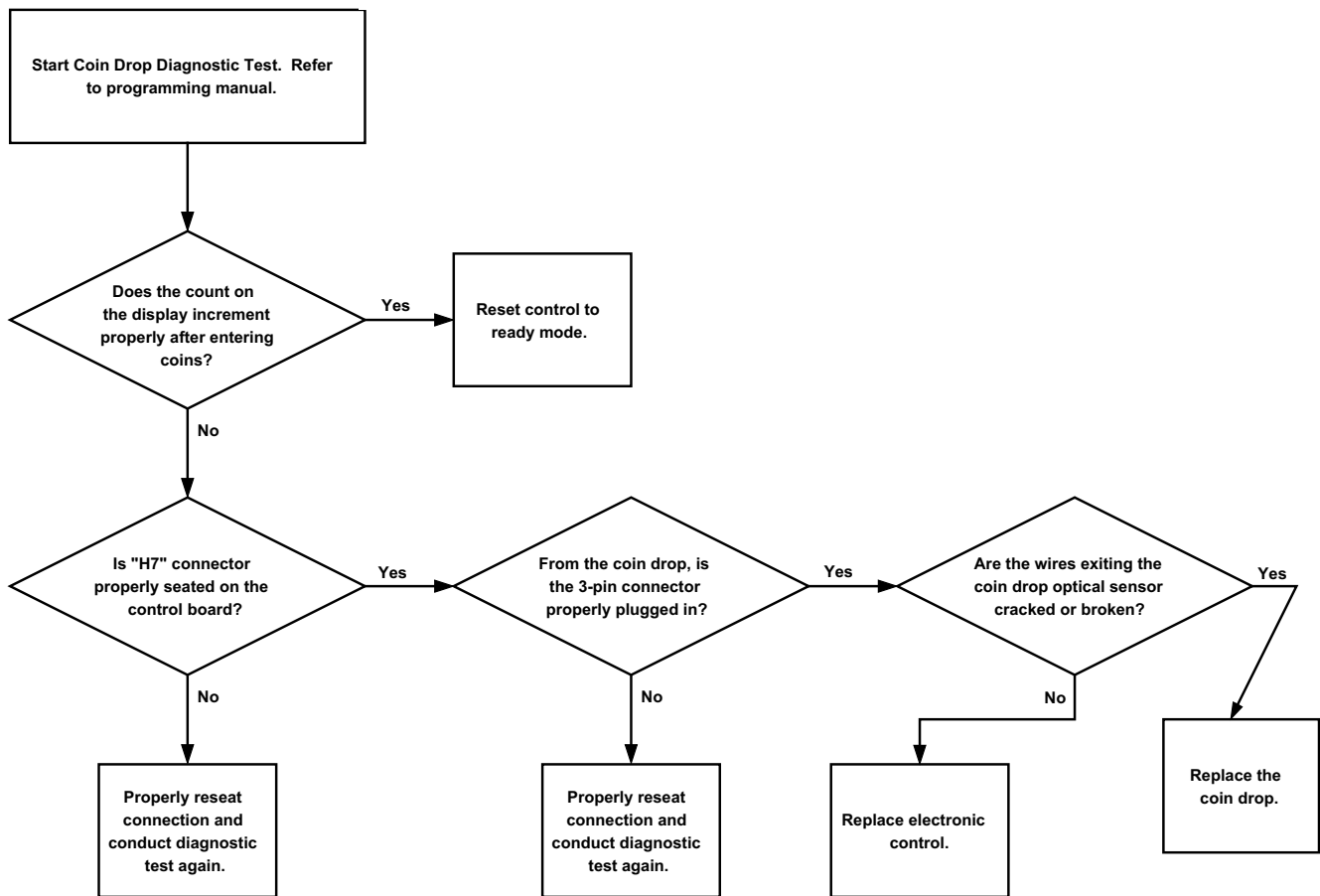


## 28. MICROWAND DOES NOT COMMUNICATE WITH CONTROL

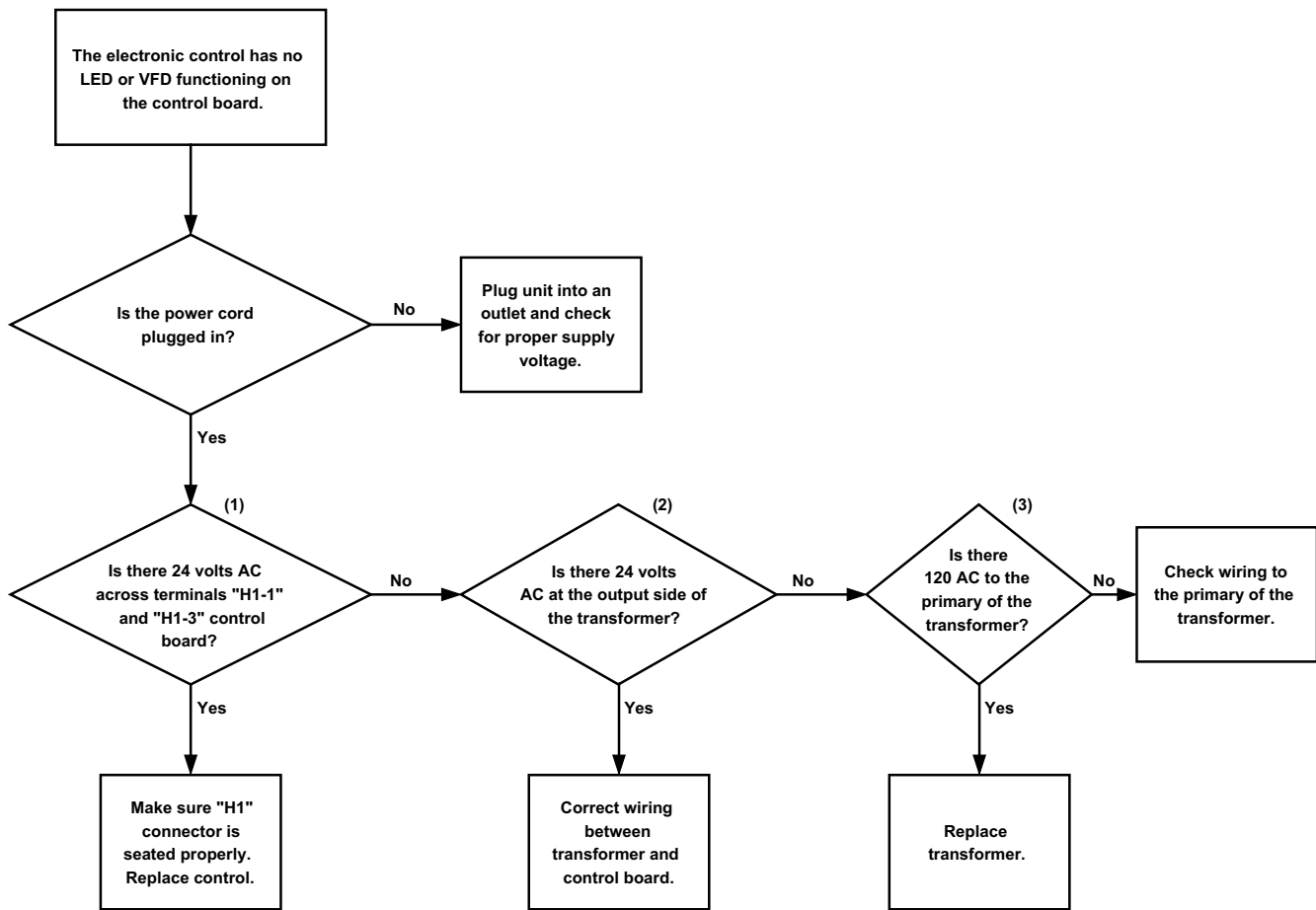


FLW296S

29. COINS IGNORED WHEN ENTERED



FLW297S

**30. NO VISIBLE DISPLAY ON CONTROL**

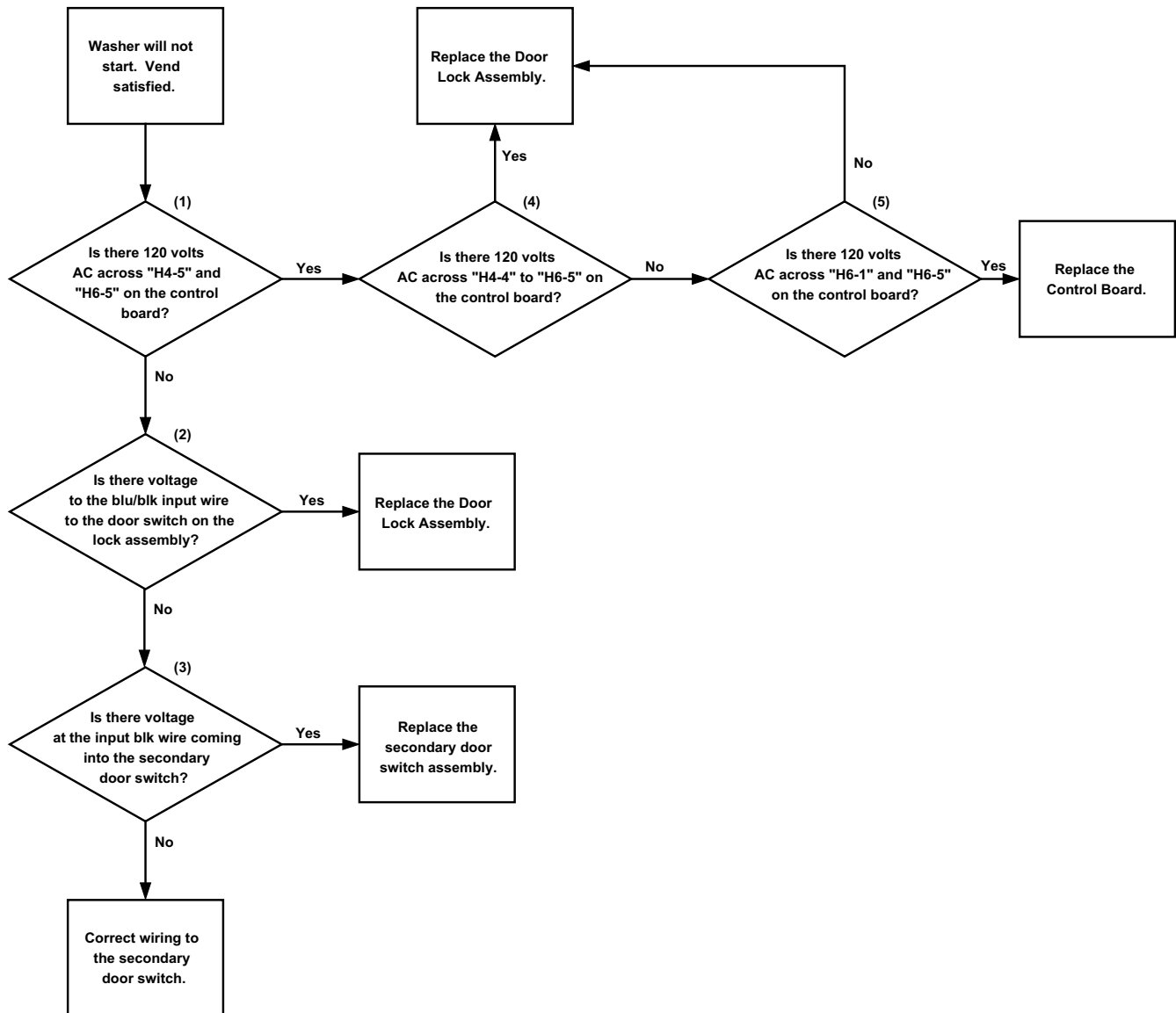
FLW298S

### NO VISIBLE DISPLAY ON CONTROL



## 31. WASHER WILL NOT START – NO DOOR LOCK

## Washer Will Not Start. No Door Lock.

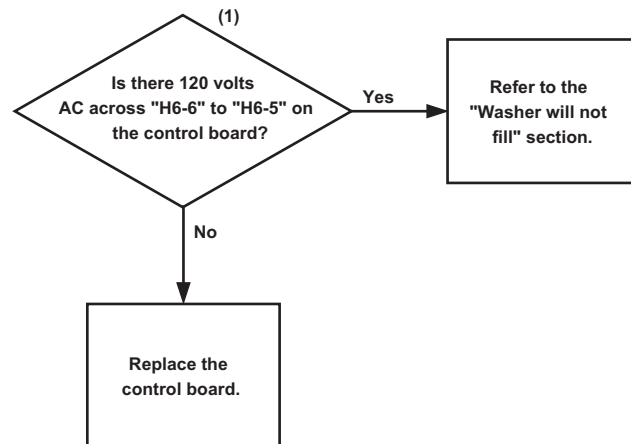


FLW300S

## WASHER WILL NOT START – NO DOOR LOCK

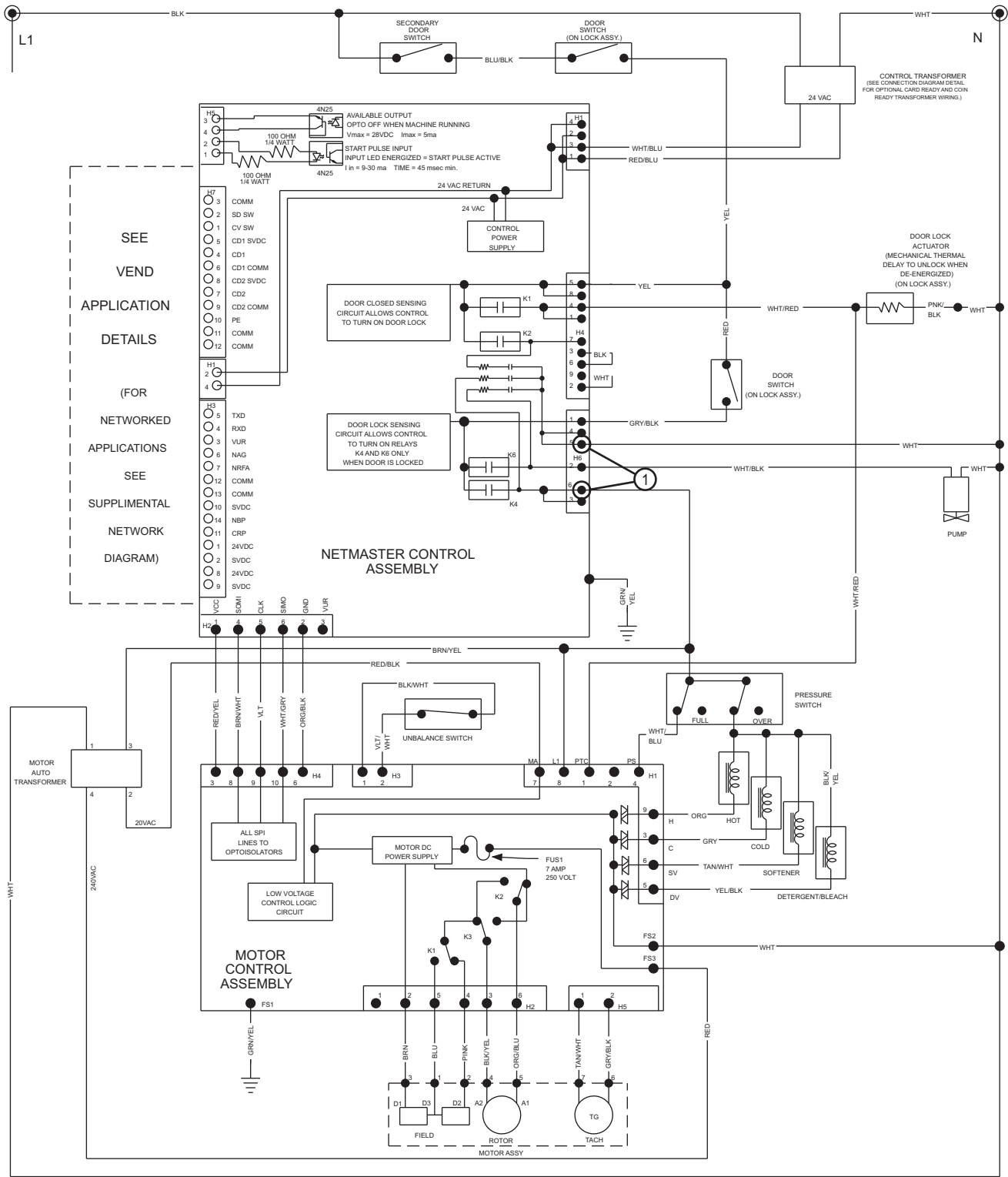


### 32. WASHER WILL NOT START – CONTROL ANALYSIS



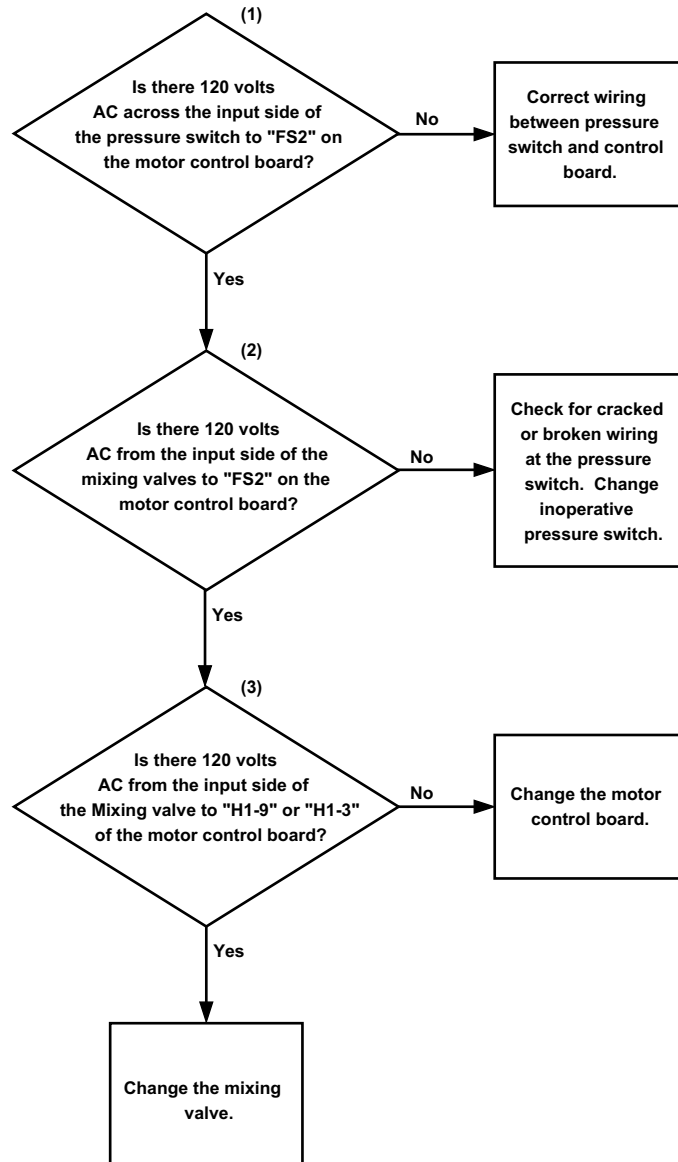
FLW302S

# WASHER WILL NOT START – CONTROL ANALYSIS



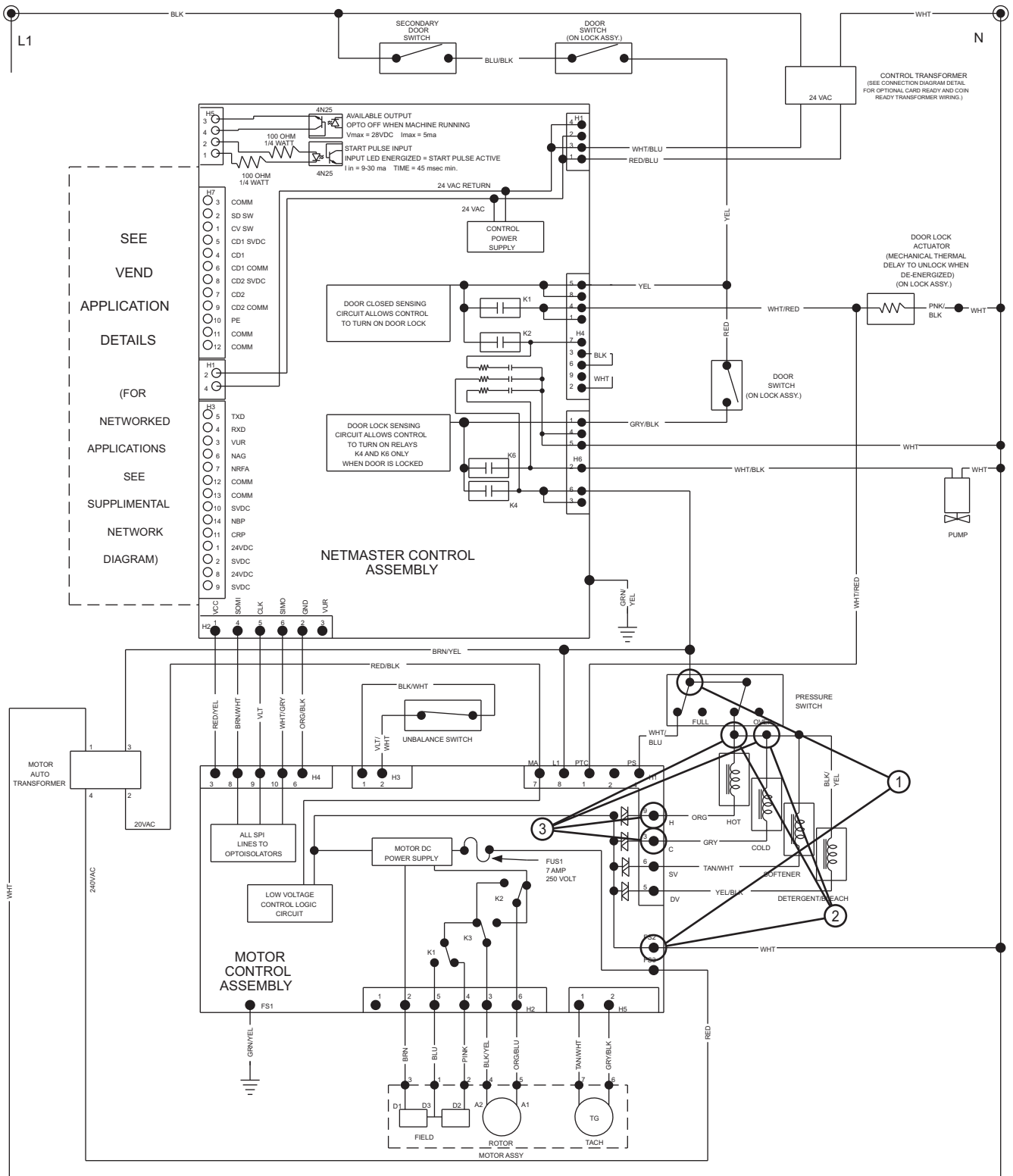
FLW303S



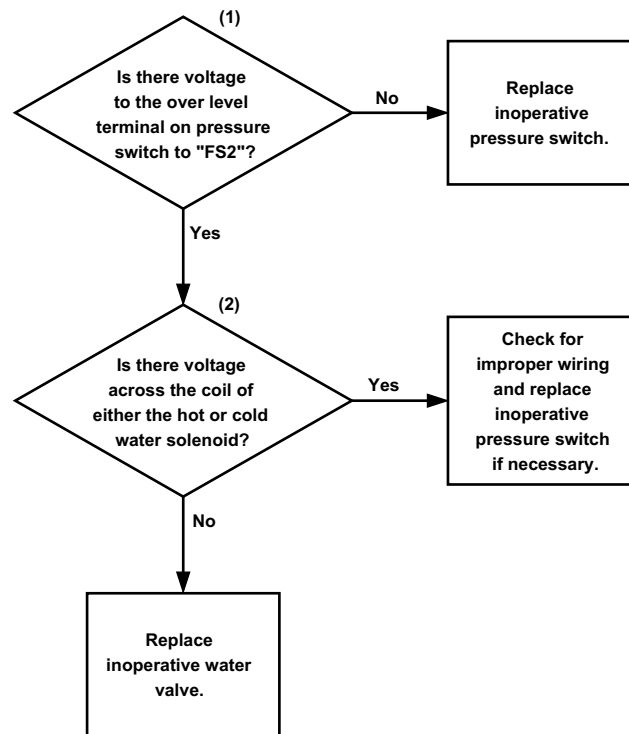
**33. WASHER WILL NOT FILL**

FLW304S

# WASHER WILL NOT FILL

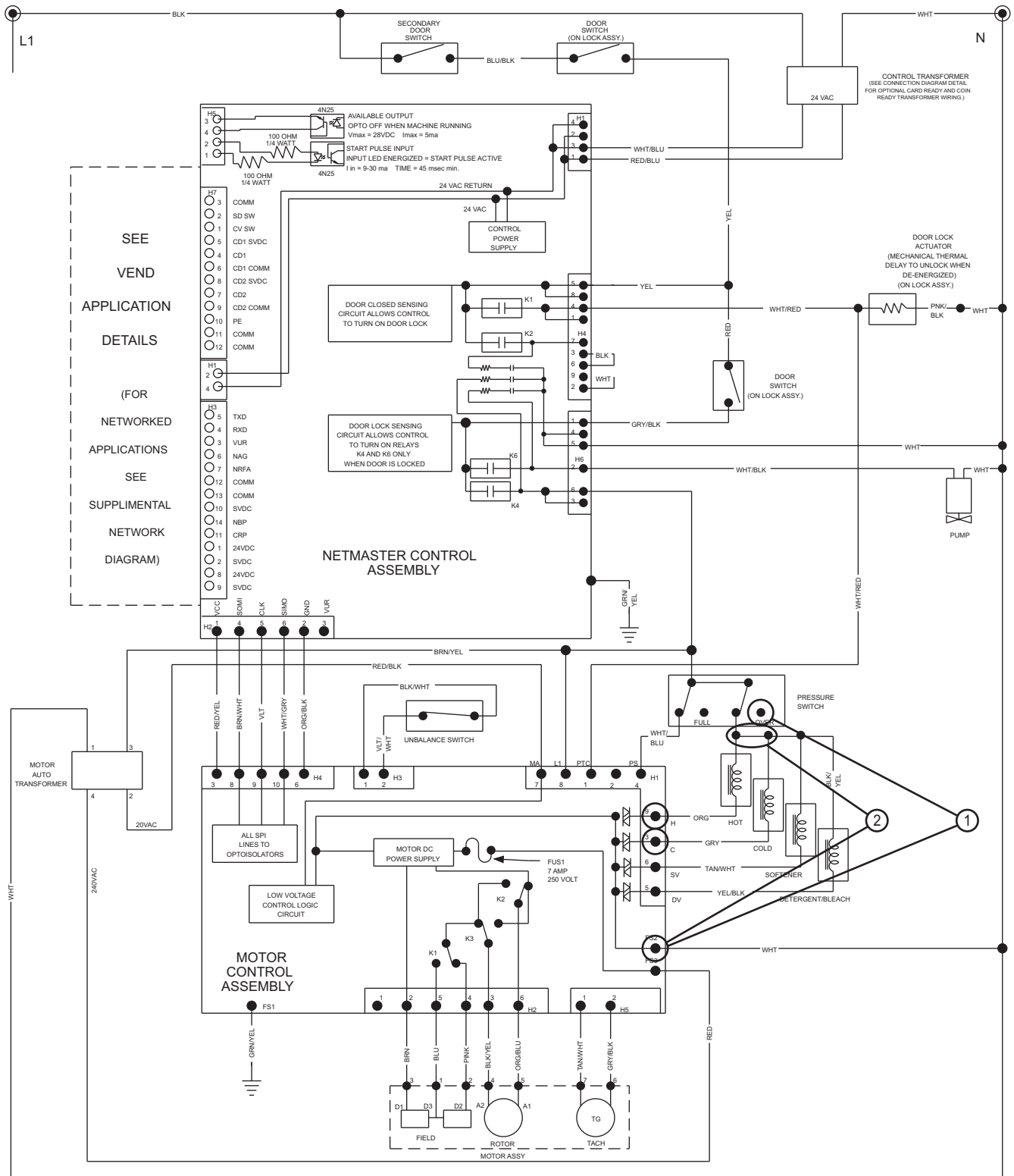


FLW305S

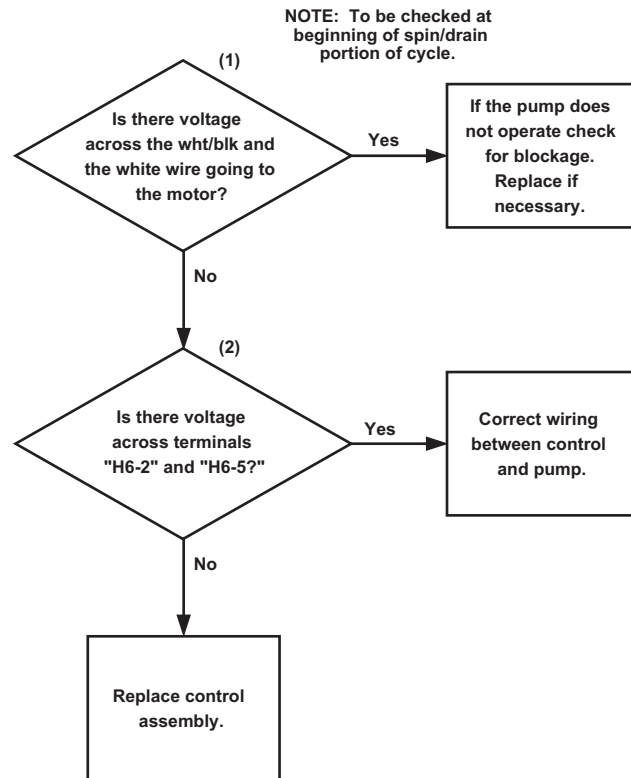
**34. WASHER OVERFLOWS**

FLW306S

# WASHER OVERFLOWS



FLW307S

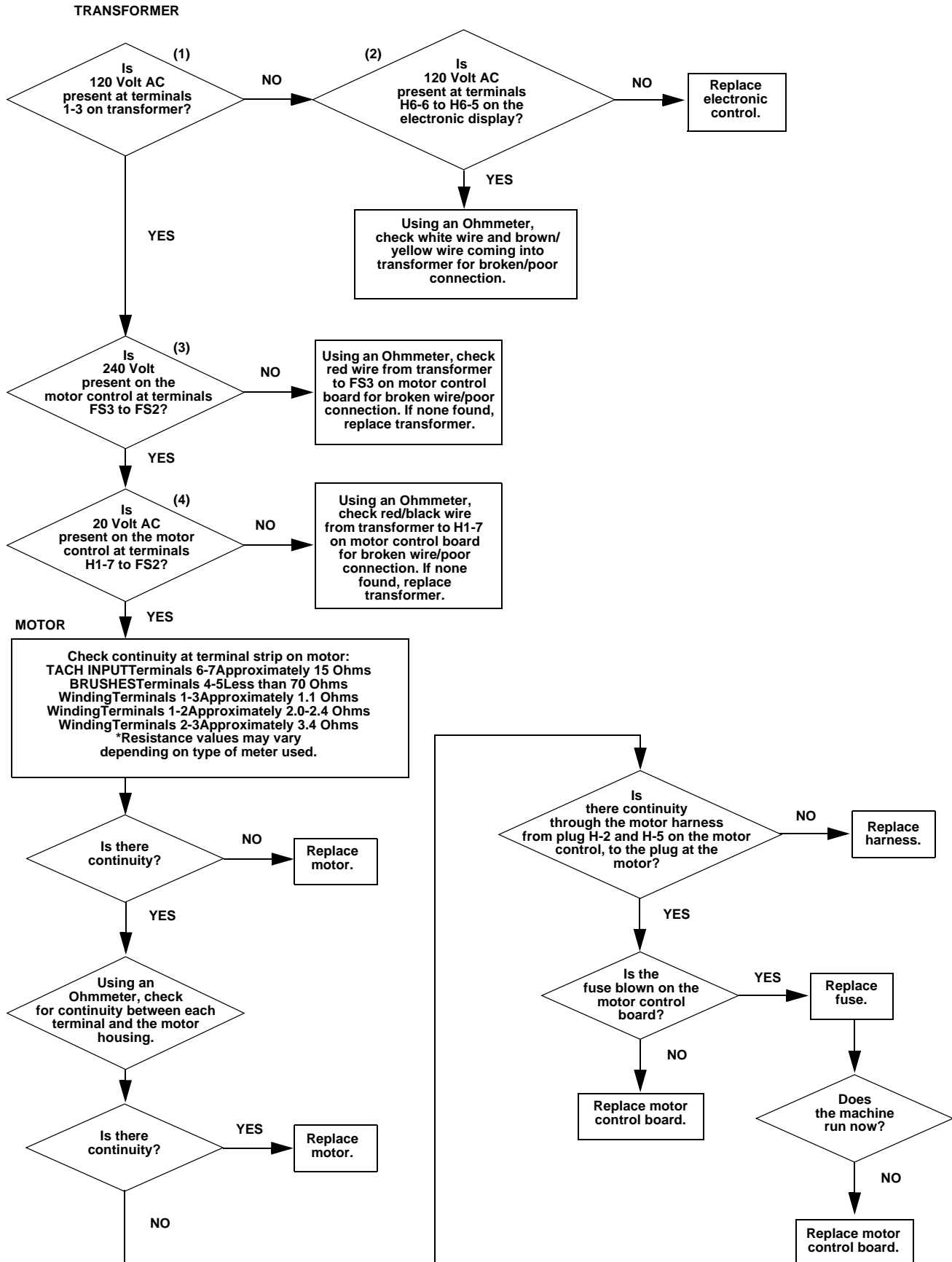
**35. PUMP DOES NOT OPERATE**

FLW308S

## PUMP DOES NOT OPERATE

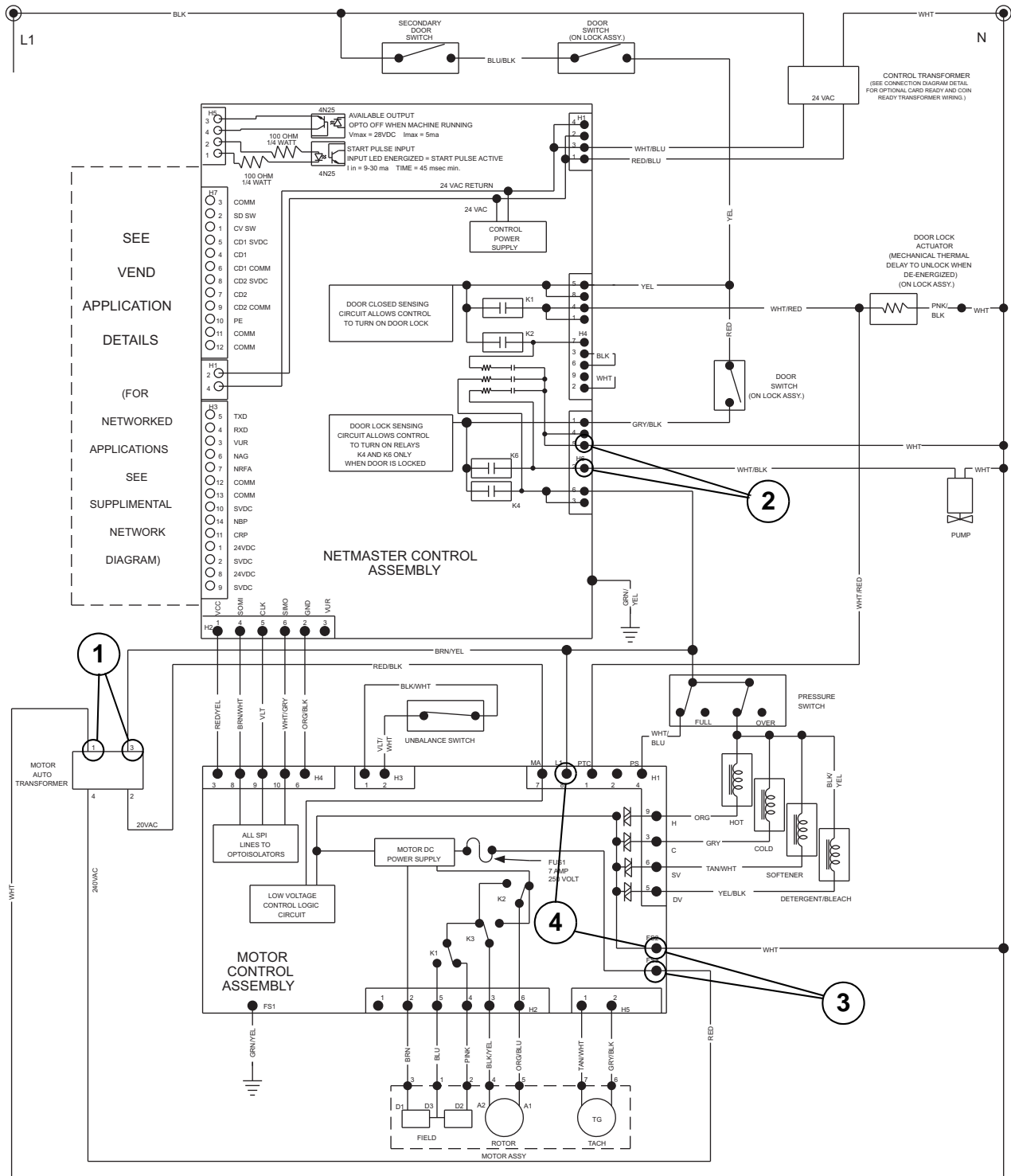


## 36. DOOR LOCKED, MOTOR DOES NOT RUN (E:DF ON DISPLAY)



## Section 3 Troubleshooting (NetMaster Models)

### DOOR LOCKED, MOTOR DOES NOT RUN (E:DF ON DISPLAY)





## Notes

[illegible]

# Section 4

## Grounding



### WARNING

To reduce the risk of electric shock, fire, explosion, serious injury or death:

- Disconnect electric power to the washer before servicing.
- Never start the washer with any guards/panels removed.
- Whenever ground wires are removed during servicing, these ground wires must be reconnected to ensure that the washer is properly grounded.

W003

### 37. WALL RECEPTACLE POLARITY CHECK.

(Figure 15).

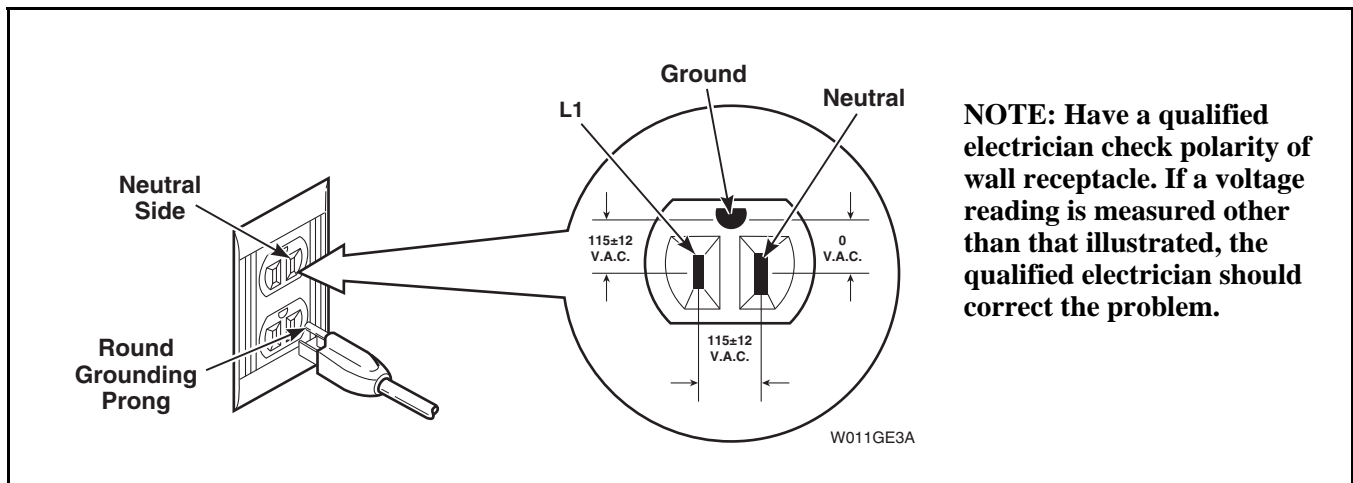


Figure 15



## WARNING

To reduce the risk of electric shock, fire, explosion, serious injury or death:

- Disconnect electric power to the washer before servicing.
- Never start the washer with any guards/panels removed.
- Whenever ground wires are removed during servicing, these ground wires must be reconnected to ensure that the washer is properly grounded.

W003

### 38. MACHINE GROUND CONNECTIONS

(Figure 16)

- ① Ground to Electronic Control
- ② Ground to Control Panel Assembly
- ③ Ground to Control Cabinet
- ④ Ground to Motor Control Board
- ⑤ Ground to Control Shield
- ⑥ Ground Power Cord to Control Cabinet Wrapper
- ⑦ Grounding Hardware to Control Cabinet Wrapper
- ⑧ Ground to Motor
- ⑨ Ground to Electric Drain Pump
- ⑩ Ground to Motor Bracket
- ⑪ Ground to Outer Tub
- ⑫ Ground to Outer Tub Front

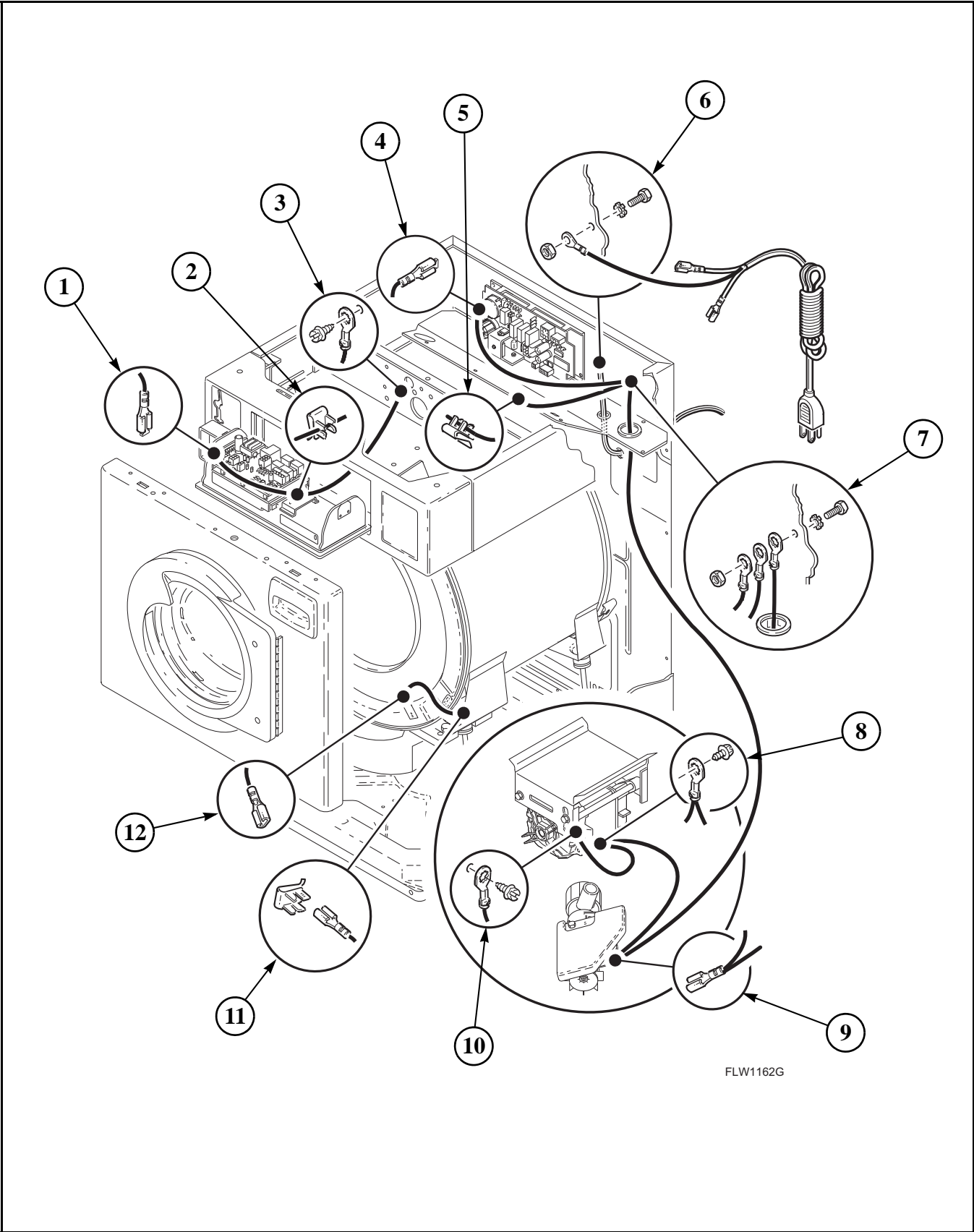


Figure 16

## Notes

[illegible]

# Section 5

## Service Procedures



### WARNING

To reduce the risk of electric shock, fire, explosion, serious injury or death:

- Disconnect electric power to the washer before servicing.
- Never start the washer with any guards/panels removed.
- Whenever ground wires are removed during servicing, these ground wires must be reconnected to ensure that the washer is properly grounded.

W003

**IMPORTANT:** When reference is made to directions (right or left) in this manual, it is from operator's position facing front of washer.

### 39. CONTROL PANEL

**IMPORTANT:** Due to the sensitivity of the electronic control, careful handling is required. As a precautionary measure, we recommend using a ground wrist strap when handling the electronic control. Wrist strap, cord and alligator clip are designed to carry away any electrostatic charge from your body and to direct charge to an available ground. By using this static protection device, potential electrostatic discharge problems associated with handling of electronic control will be minimized. Always handle electronic control by its metal edges. If a wrist strap is not available, touch washer while it is plugged in before handling control to dissipate any charge.

- a. Unlock control panel. Refer to *Figure 17, Step 1*.
- b. Pull top of control panel away from control cabinet far enough to allow lifting control panel up and off the rail support of the control cabinet. Refer to *Figure 17, Step 2*.
- c. Remove control panel away from control cabinet as far as wires permit. Refer to *Figure 17, Step 3*.
- d. While supporting control panel, disconnect all wires and harness connectors from electronic control and indicator light.

**NOTE:** DO NOT pull on wires. Instead, hold board near appropriate disconnect block and unplug by pulling on disconnect block.

- e. Remove ground clip holding ground wire to control panel.

**NOTE:** Refer to wiring diagram when reconnecting wires.

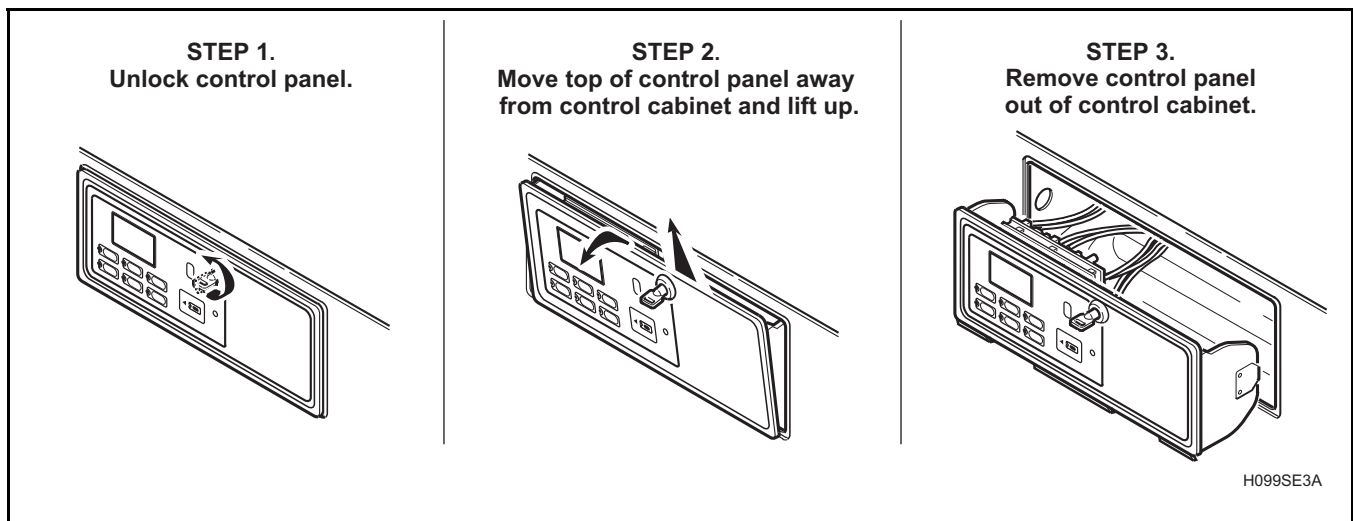


Figure 17



## WARNING

To reduce the risk of electric shock, fire, explosion, serious injury or death:

- Disconnect electric power to the washer before servicing.
- Never start the washer with any guards/panels removed.
- Whenever ground wires are removed during servicing, these ground wires must be reconnected to ensure that the washer is properly grounded.

W003

### 40. INDICATOR LIGHT

(Door Locked)

- Unlock control panel. Refer to *Figure 17, Step 1*.
- Pull top of control panel away from control cabinet far enough to allow lifting control panel up and off the rail support of the control cabinet. Refer to *Figure 17, Step 2*.

- Remove control panel away from control cabinet as far as wires permit. Refer to *Figure 17, Step 3*.
- While supporting control panel, disconnect wires from indicator light.

**NOTE:** Refer to wiring diagram when rewiring light.

- Squeeze locking tabs together and pull light out rear of control panel. Refer to *Figure 18*.

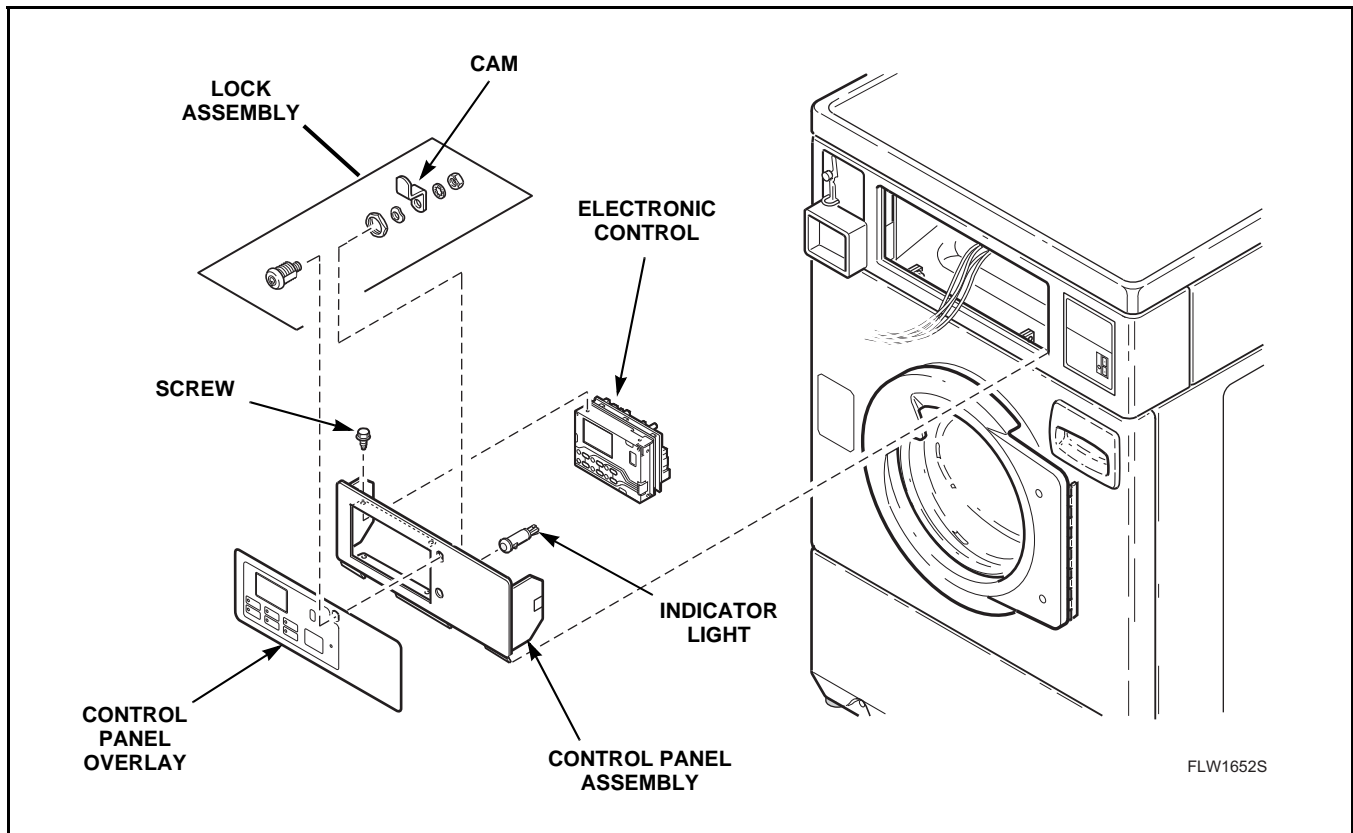


Figure 18



## WARNING

To reduce the risk of electric shock, fire, explosion, serious injury or death:

- Disconnect electric power to the washer before servicing.
- Never start the washer with any guards/panels removed.
- Whenever ground wires are removed during servicing, these ground wires must be reconnected to ensure that the washer is properly grounded.

W003

### 41. ELECTRONIC CONTROL

**IMPORTANT:** Due to the sensitivity of the electronic control, careful handling is required. As a precautionary measure, we recommend using a ground wrist strap when handling the electronic control. Wrist strap, cord and alligator clip are designed to carry away any electrostatic charge from your body and to direct charge to an available ground. By using this static protection device, potential electrostatic discharge problems associated with handling of electronic control will be minimized. Always handle electronic control by its metal edges. If a wrist strap is not available, touch washer while it is plugged in before handling control to dissipate any charge.

**NOTE:** New control is supplied in a special anti-static wrapping, and protected by anti-static foam. While holding control by its metal edges, remove control from foam and wrapping.

- a. Unlock control panel. Refer to *Figure 17, Step 1*.
- b. Pull top of control panel away from control cabinet far enough to allow lifting control panel up and off the rail support of the control cabinet. Refer to *Figure 17, Step 2*.
- c. Remove control panel away from control cabinet as far as wires permit. Refer to *Figure 17, Step 3*.
- d. While supporting control panel, press in on locking tabs and unplug harness disconnect blocks from backside of electronic control.

**NOTE: DO NOT pull on wires. Instead, hold board near appropriate disconnect block and unplug by pulling on disconnect block.**

- e. Remove four screws holding electronic control assembly to backside of control panel. Refer to *Figure 18*.
- f. Place the old control in the anti-static wrapping that the new control was supplied in.

- g. While holding new control by its metal edges, place control in opening of control panel and fasten control down with four screws removed in step “e”. Refer to *Figure 18*.

**NOTE:** For proper control alignment, tighten the top two screws first then tighten the bottom screws. Refer to *Figure 18*.

- h. Follow wiring diagram and reconnect wires to new control.

**IMPORTANT:** It is important to take care when handling the original control. It must be carefully placed in the anti-static wrapping and anti-static foam which was removed from new control. If control is not wrapped properly, warranty credit will not be issued.

### 42. CONTROL PANEL OVERLAY

**IMPORTANT:** Due to the sensitivity of the electronic control, careful handling is required. As a precautionary measure, we recommend using a ground wrist strap when handling the electronic control. Wrist strap, cord and alligator clip are designed to carry away any electrostatic charge from your body and to direct charge to an available ground. By using this static protection device, potential electrostatic discharge problems associated with handling of electronic control will be minimized. Always handle electronic control by its metal edges. If a wrist strap is not available, touch washer while it is plugged in before handling control to dissipate any charge.

- a. Removal:
  - (1) Unlock control panel. Refer to *Figure 17, Step 1*.
  - (2) Pull top of control panel away from control cabinet far enough to allow lifting control panel up and off the rail support of the control cabinet. Refer to *Figure 17, Step 2*.
  - (3) Remove control panel away from control cabinet as far as wires permit. Refer to *Figure 17, Step 3*.





## WARNING

To reduce the risk of electric shock, fire, explosion, serious injury or death:

- Disconnect electric power to the washer before servicing.
- Never start the washer with any guards/panels removed.
- Whenever ground wires are removed during servicing, these ground wires must be reconnected to ensure that the washer is properly grounded.

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- (4) Support control panel, press in on locking tabs and unplug harness disconnect blocks from backside of electronic control.

**NOTE: DO NOT pull on wires. Instead, hold board near appropriate disconnect block and unplug by pulling on disconnect block.**

- (5) Remove four screws holding electronic control assembly to backside of control panel. Refer to *Figure 18*.
- (6) Remove lock assembly from control panel. Refer to *Figure 18*. Remove control panel overlay by peeling it from the control panel assembly.

**NOTE: Control panel overlay has an adhesive backing.**

- b. Installation:

**NOTE: Before removing protective backing from new overlay, check fit of overlay to control panel assembly. Refer to *Figure 18*. Use the lock hole in the control panel as the locating guide.**

- (1) Once panel overlay is fitted to the front of control panel frame, carefully peel protective backing from the left end of panel overlay and press into place.
- (2) Remove rest of protective backing from panel overlay and press overlay into place on control panel assembly.
- (3) While holding control by its metal edges, place control in opening of control panel and fasten control down with four screws. Refer to *Figure 18*.
- (4) Follow wiring diagram and reconnect wires to control.

**IMPORTANT: It is important to use care when handling the control.**

- (5) Reinstall control panel in control cabinet and lock control panel.

### 43. CABINET TOP

- a. Unlock control panel. Refer to *Figure 17, Step 1*.
- b. Pull top of control panel away from control cabinet far enough to allow lifting control panel up and off the rail support of the control cabinet. Refer to *Figure 17, Step 2*.
- c. Remove control panel away from control cabinet as far as wires permit. Refer to *Figure 17, Step 3*.
- d. Remove two screws holding front of cabinet top to top front edge of control cabinet front. Refer to *Figure 19*.
- e. If area or space permits, lift cabinet top to a vertical position by hinging it on the rear hinges.

**NOTE: To avoid damage to hinges, be sure to support cabinet top with a small chain or something similar. Refer to *Figure 21*.**

- f. Remove cabinet top from washer by removing nuts and carriage bolts holding cabinet top and hinges to control cabinet. Refer to *Figure 20*.
- g. Carefully lift cabinet top off washer and set out of the way to prevent damage.

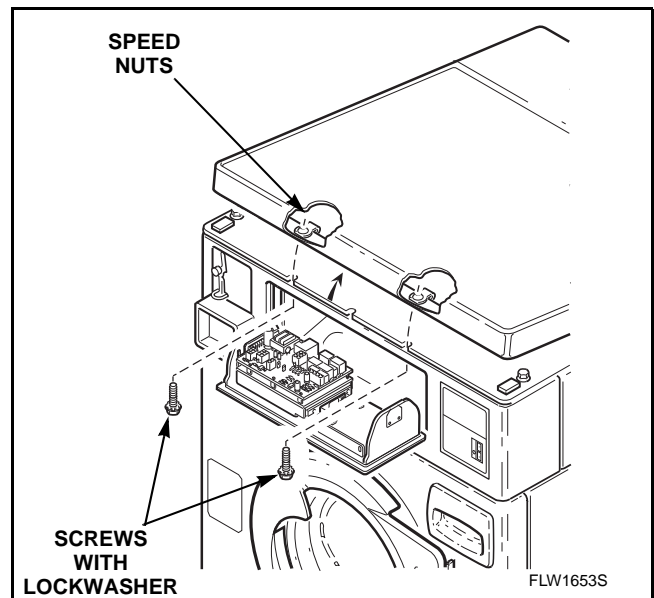


Figure 19

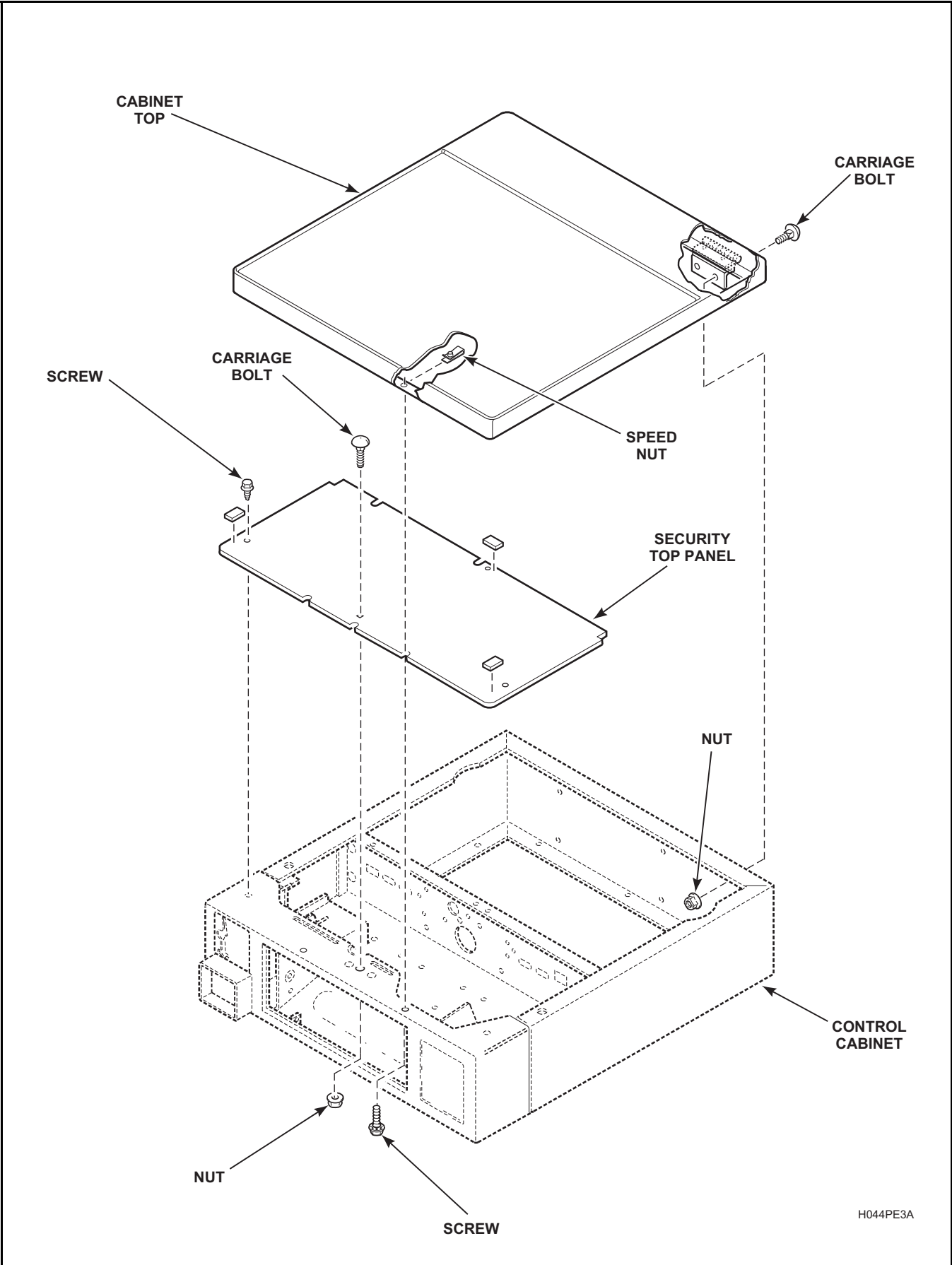


Figure 20



## WARNING

To reduce the risk of electric shock, fire, explosion, serious injury or death:

- Disconnect electric power to the washer before servicing.
- Never start the washer with any guards/panels removed.
- Whenever ground wires are removed during servicing, these ground wires must be reconnected to ensure that the washer is properly grounded.

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### 44. COIN DROP

#### a. Removal:

- (1) Unlock control panel. Refer to *Figure 17, Step 1*.
- (2) Pull top of control panel away from control cabinet far enough to allow lifting control panel up and off the rail support of the control cabinet front. Refer to *Figure 17, Step 2*.
- (3) Remove control panel away from control cabinet as far as wires permit. Refer to *Figure 17, Step 3*.
- (4) Remove 2 screws holding front of cabinet top to top front edge of control cabinet front. Refer to *Figure 19*.
- (5) If area or space permits, lift cabinet top to a vertical position by hinging it on the rear hinges.

**NOTE:** To avoid damage to hinges, be sure to support cabinet top with a small chain or something similar. Refer to *Figure 21*.

- (6) If equipped with security top panel, remove screws and carriage bolt holding panel to control cabinet front. Refer to *Figure 21*. Slide security top panel back just far enough to disengage tabs on panel from control cabinet front and remove security panel. Refer to *Figure 21*.
- (7) Disconnect coin drop harness at disconnect block.
- (8) Use a 3/8 inch square drive socket, with number 310P4—quarter inch Ratchet Extension Tool, to remove 2 locknuts holding coin drop to front of control cabinet.

**NOTE:** A 3/8 inch square drive socket, size 7/16 inch, fits over end of the 310P4 Extension Tool. A 1/4 inch ratchet fits in the other end. Refer to *Figure 22*.

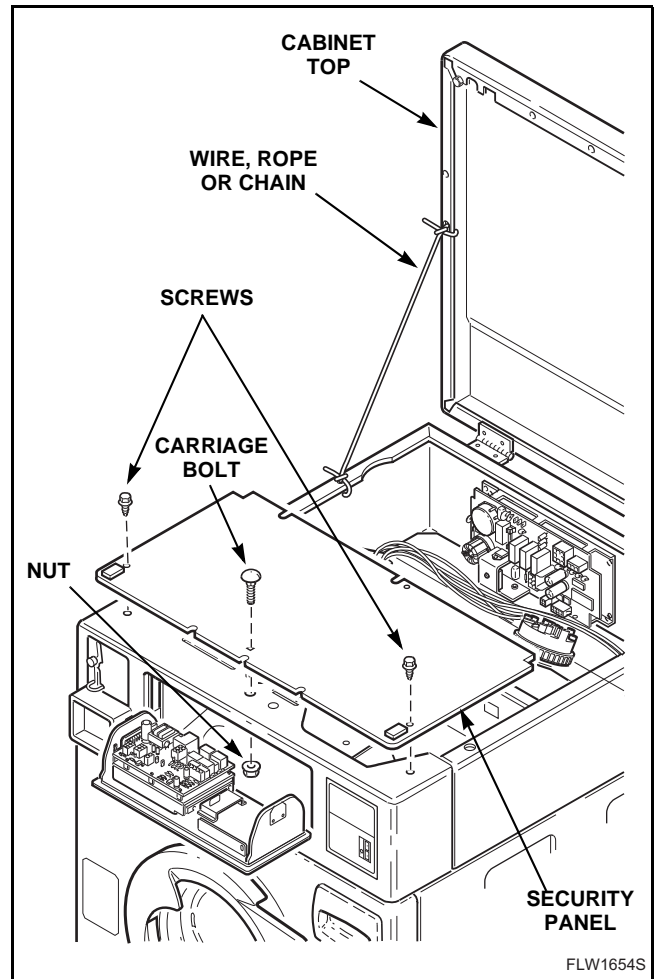


Figure 21

- (9) Lift back end of coin drop and pull drop straight back until front edge of the drop's front face plate clears the 2 guide wires.
- (10) Carefully slide drop straight back until drop clears inside wall of control cabinet. Carefully remove drop out through top of control cabinet.

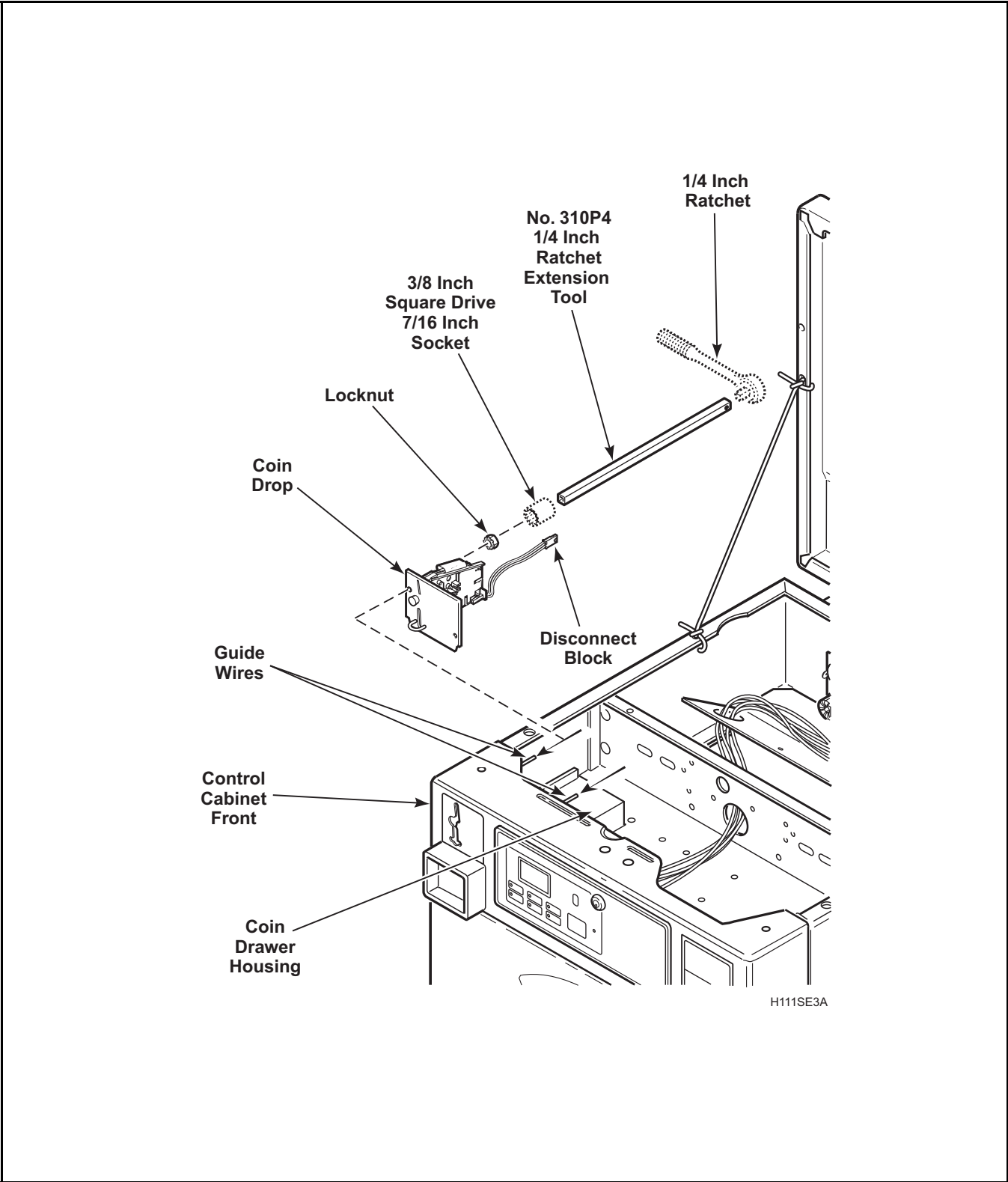


Figure 22



## WARNING

To reduce the risk of electric shock, fire, explosion, serious injury or death:

- Disconnect electric power to the washer before servicing.
- Never start the washer with any guards/panels removed.
- Whenever ground wires are removed during servicing, these ground wires must be reconnected to ensure that the washer is properly grounded.

W003

b. Installation:

- (1) Lift coin drop up on coin drawer housing.
- (2) Line up holes in the front face plate of coin drop with the 2 guide wires. Slide coin drop forward, making sure guide wires are through holes in front face plate of coin drop.
- (3) Slide coin drop forward all the way until front face plate of coin drop is up against the control cabinet front, with the coin return stop completely through slot.
- (4) Using a 3/8 inch square drive 7/16 inch socket with number 310P4 1/4 inch Ratchet extension Tool, reinstall both locknuts and tighten locknuts firmly.
- (5) Reconnect coin drop wire harness.
- (6) Reinstall security top panel and secure using screws and carriage bolt previously removed.
- (7) Lower cabinet top into position and reinstall 2 screws (previously removed) holding cabinet top to top front edge of control cabinet front. Refer to *Figure 19*.
- (8) Reinstall control panel in control cabinet and lock control panel.

### 45. CARD READER

a. Removal:

- (1) Unlock control panel. Refer to *Figure 17, Step 1*.
- (2) Pull top of control panel away from control cabinet far enough to allow lifting control panel up and off the rail support of the control cabinet front. Refer to *Figure 17, Step 2*.
- (3) Remove control panel away from control cabinet as far as wires permit. Refer to *Figure 17, Step 3*.
- (4) Remove 2 screws holding front of cabinet top to top front edge of control cabinet front. Refer to *Figure 19*.
- (5) If area or space permits, lift cabinet top to a vertical position by hinging it on the rear hinges.

**NOTE: To avoid damage to hinges, be sure to support cabinet top with a small chain or something similar. Refer to *Figure 21*.**

- (6) Remove screws and carriage bolt holding security top panel to control cabinet front. Refer to *Figure 21*. Slide security top panel back just far enough to disengage tabs on panel from control cabinet front and remove security panel. Refer to *Figure 21*.
- (7) Disconnect card reader harness at disconnect block.
- (8) Use a 3/8 inch square drive socket, with number 310P4 1/4 inch Ratchet Extension Tool, to remove screws or nuts holding card reader to control cabinet front and carefully remove card reader out through top of control cabinet. Refer to *Figure 23*.

**NOTE: A 3/8 inch square drive socket, size 7/16 inch, fits over end of the 310P4 Extension Tool. A 1/4 inch ratchet fits in the other end. Refer to *Figure 23*.**

b. Installation:

- (1) Carefully place card reader into opening in control cabinet front.
- (2) Using a 3/8 inch square drive 7/16 inch socket with number 310P4 1/4 inch Ratchet Extension Tool, secure card reader to control cabinet front with screws or nuts previously removed. Refer to *Figure 23*. Then tighten screws or nuts firmly.
- (3) Reconnect card reader harness.
- (4) Reinstall security top panel and secure using screws and carriage bolt previously removed.
- (5) Lower cabinet top into position and reinstall 2 screws (previously removed) holding cabinet top to top front edge of control cabinet front. Refer to *Figure 19*.
- (6) Reinstall control panel in control cabinet and lock control panel.

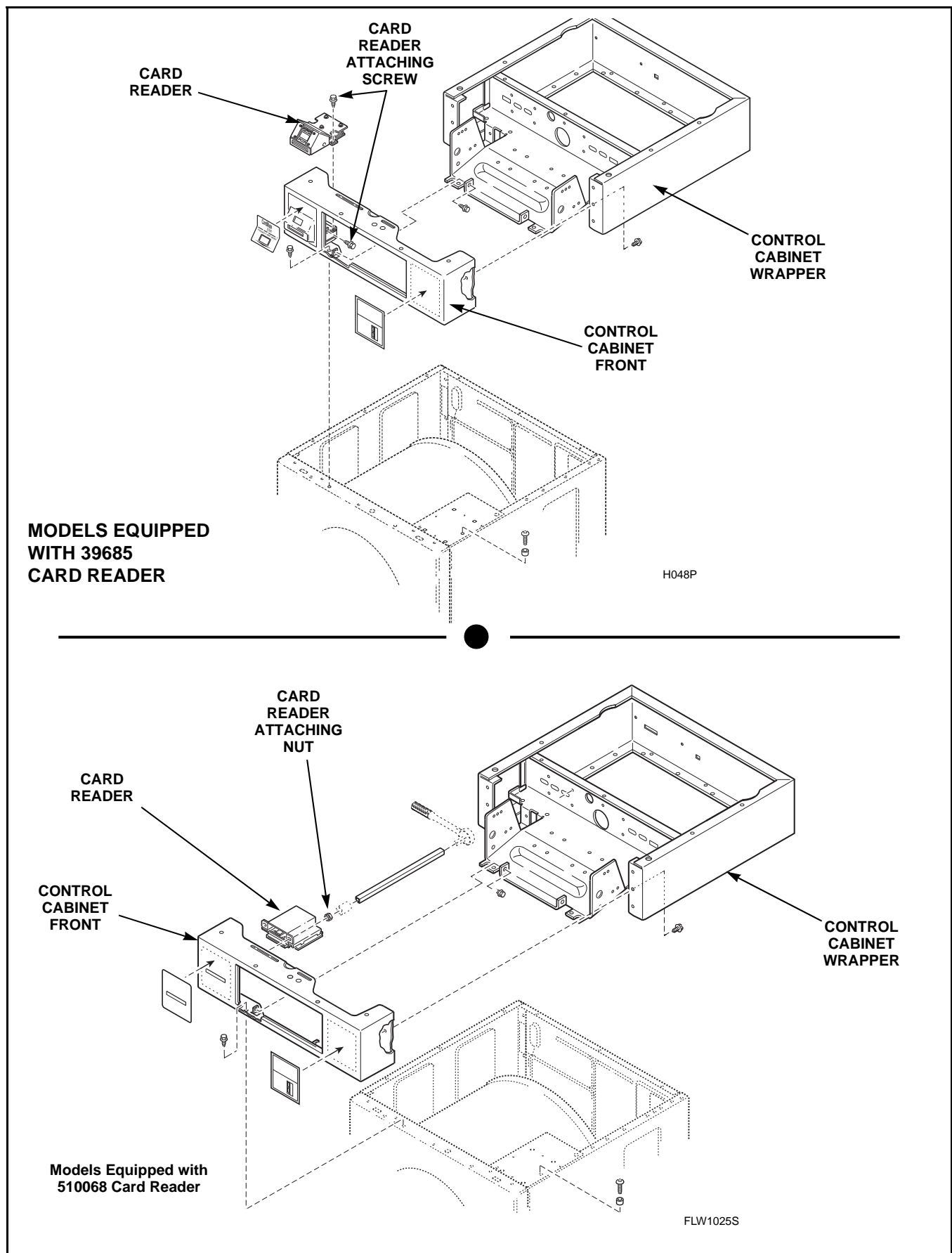


Figure 23



## WARNING

To reduce the risk of electric shock, fire, explosion, serious injury or death:

- Disconnect electric power to the washer before servicing.
- Never start the washer with any guards/panels removed.
- Whenever ground wires are removed during servicing, these ground wires must be reconnected to ensure that the washer is properly grounded.

W003

### 46. MOTOR CONTROL BOARD

- Unlock control panel. Refer to *Figure 17, Step 1*.
- Pull top of control panel away from control cabinet far enough to allow lifting control panel up and off the rail support of the control cabinet. Refer to *Figure 17, Step 2*.
- Remove control panel away from control cabinet as far as wires permit. Refer to *Figure 17, Step 3*.
- Remove two screws holding front of cabinet top to top front edge of control cabinet front. Refer to *Figure 19*.
- If area or space permits, lift cabinet top to a vertical position by hinging it on the rear hinges. Refer to *Figure 21*.

**NOTE:** To avoid damage to hinges, be sure to support cabinet top with a small chain or something similar. Refer to *Figure 21*.

**IMPORTANT:** Due to the sensitivity of the motor control board, careful handling is required. As a precautionary measure, we recommend using a ground wrist strap when handling the motor control board. Wrist strap, cord and alligator clip are designed to carry away any electrostatic charge from your body and to direct charge to an available ground. By using this static protection device, potential electrostatic discharge problems associated with handling of motor control board will be minimized. Always handle motor control board by its metal edges. If a wrist strap is not available, touch washer while it is plugged in before handling control to dissipate any charge.

**NOTE:** New control is supplied in a special anti-static wrapping, and protected by anti-static foam. While holding control by its metal edges, remove control from foam and wrapping.

- Press in on locking tabs and unplug harness disconnect blocks and all wires from motor control board.

**NOTE:** DO NOT pull on wires, instead, hold board near appropriate disconnect block and unplug by pulling on disconnect block.

- Remove four screws holding motor control board to back of control cabinet wrapper. Refer to *Figure 24*.
- Place old control board in the anti-static wrapping that new control board was supplied in.
- Position the new motor control board on back of control cabinet wrapper as shown in *Figure 24*. Reinstall screws (removed in Step “g”) and tighten firmly.
- Follow the wiring diagram and reconnect wires and harness disconnect blocks to new motor control board.

**IMPORTANT:** It is important to take care when handling the original motor control board. It must be carefully placed in the anti-static wrapping and anti-static foam which was removing from new motor control board. If motor control board is not wrapped properly, warranty credit will not be issued.

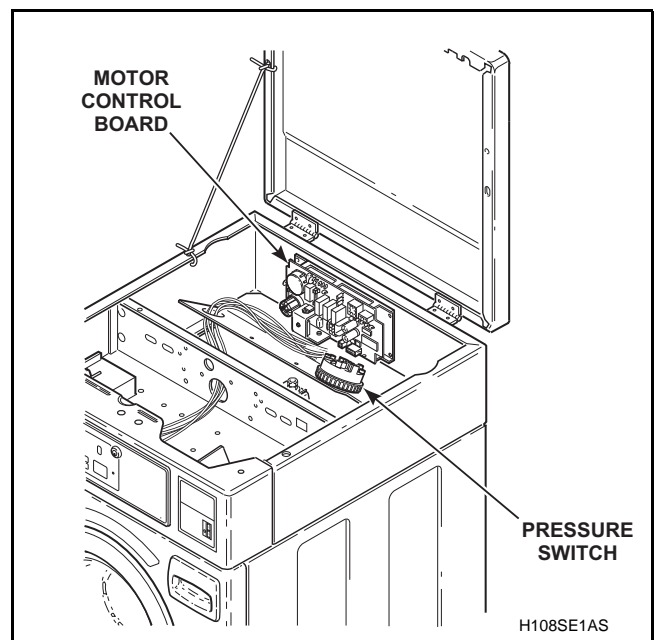


Figure 24





## WARNING

To reduce the risk of electric shock, fire, explosion, serious injury or death:

- Disconnect electric power to the washer before servicing.
- Never start the washer with any guards/panels removed.
- Whenever ground wires are removed during servicing, these ground wires must be reconnected to ensure that the washer is properly grounded.

W003

### 47. PRESSURE SWITCH

- a. Unlock control panel. Refer to *Figure 17, Step 1*.
- b. Pull top of control panel away from control cabinet far enough to allow lifting control panel up and off the rail support of the control cabinet. Refer to *Figure 17, Step 2*.
- c. Remove control panel away from control cabinet as far as wires permit. Refer to *Figure 17, Step 3*.
- d. Remove two screws holding front of cabinet top to top front edge of control cabinet front. Refer to *Figure 19*.
- e. If area or space permits, lift cabinet top to a vertical position by hinging it on the rear hinges.

**NOTE:** To avoid damage to hinges, be sure to support cabinet top with a small chain or something similar. Refer to *Figure 21*.

- f. Disconnect wires from pressure switch at disconnect block.
- g. Disconnect pressure hose from pressure switch.

**IMPORTANT:** When installing pressure switch, blow air into hose before connecting hose to switch to remove any moisture that may have accumulated in hose.

- h. Squeeze in locking tabs on pressure switch and push switch out toward rear of control shield. Refer to *Figure 24*.

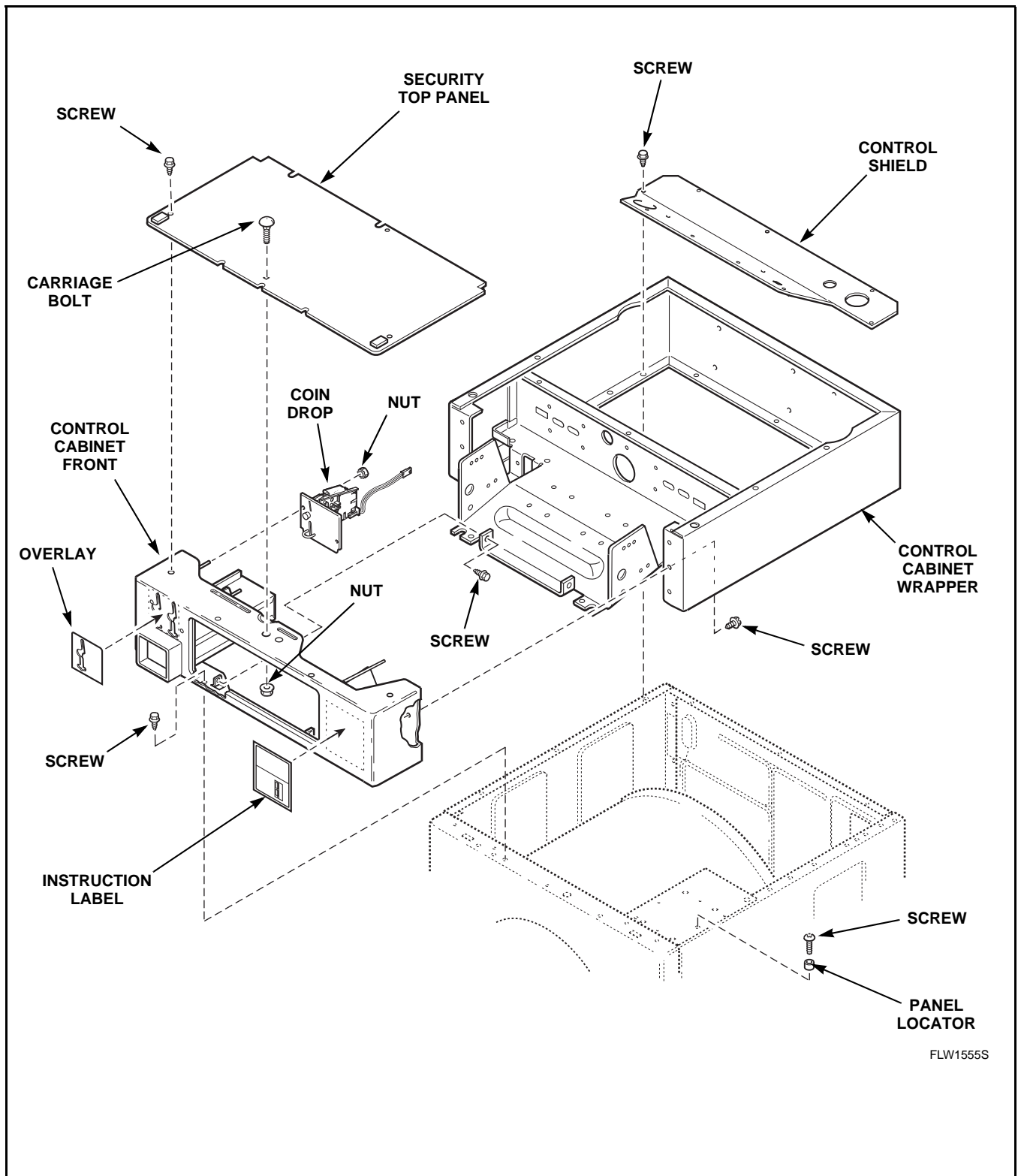
### 48. CONTROL CABINET FRONT

- a. Unlock control panel. Refer to *Figure 17, Step 1*.
- b. Pull top of control panel away from control cabinet far enough to allow lifting control panel up and off the rail support of the control cabinet. Refer to *Figure 17, Step 2*.
- c. Remove control panel away from control cabinet as far as wires permit. Refer to *Figure 17, Step 3*.
- d. Remove two screws holding front of cabinet top to top front edge of control cabinet front. Refer to *Figure 19*.
- e. If area or space permits, lift cabinet top to a vertical position by hinging it on the rear hinges.

**NOTE:** To avoid damage to hinges, be sure to support cabinet top with a small chain or something similar. Refer to *Figure 21*.

- f. Remove screws holding security top panel to control cabinet front. Refer to *Figure 25*. Slide security top panel back just far enough to disengage tabs on panel from control cabinet front. Refer to *Figure 25*.
- g. Remove two screws holding bottom front flange of control cabinet front to top flange of washer front panel. Refer to *Figure 25*.
- h. Remove three screws (per side) holding control cabinet front to front flange of control cabinet wrapper. Refer to *Figure 25*.
- i. Remove two screws holding control cabinet wrapper tabs to control cabinet front tabs. Refer to *Figure 25*.
- j. Carefully pull control cabinet front straight out and away from control cabinet wrapper. Refer to *Figure 25*.





FLW1555S

Figure 25



## WARNING

To reduce the risk of electric shock, fire, explosion, serious injury or death:

- Disconnect electric power to the washer before servicing.
- Never start the washer with any guards/panels removed.
- Whenever ground wires are removed during servicing, these ground wires must be reconnected to ensure that the washer is properly grounded.

W003

### 49. CONTROL CABINET WRAPPER

- Unlock control panel. Refer to *Figure 17, Step 1*.
- Pull top of control panel away from control cabinet far enough to allow lifting control panel up and off the rail support of the control cabinet. Refer to *Figure 17, Step 2*.
- Remove control panel away from control cabinet as far as wires permit. Refer to *Figure 17, Step 3*.
- Remove two screws holding front of cabinet top to top front edge of control cabinet front. Refer to *Figure 19*.
- If area or space permits, lift cabinet top to a vertical position by hinging it on the rear hinges.

**NOTE:** To avoid damage to hinges, be sure to support cabinet top with a small chain or something similar. Refer to *Figure 21*.

- Remove cabinet top from washer by removing nuts and carriage bolts holding cabinet top and hinges to control cabinet. Refer to *Figure 20*.
- Carefully lift cabinet top off washer and set out of the way to prevent damage.
- Remove screws holding security top panel to control cabinet front. Refer to *Figure 21*. Slide security top panel back just far enough to disengage tabs on panel from control cabinet front and remove panel.
- Remove screws holding control shield (with controls attached) to bottom rear flange of control cabinet wrapper.
- Remove screws holding motor control board to rear of control cabinet wrapper. Refer to *Figure 24*.
- Remove screws holding control cabinet wrapper to top flange of side panels. Refer to *Figure 25*.
- Carefully lift control cabinet assembly off washer and set out of the way.

### 50. LOWER ACCESS PANEL

- While supporting the lower access panel, remove two screws from bottom edge of lower access panel. Refer to *Figure 26*.
- Gently lower the access panel to disengage panel locators from bottom edge of front panel.

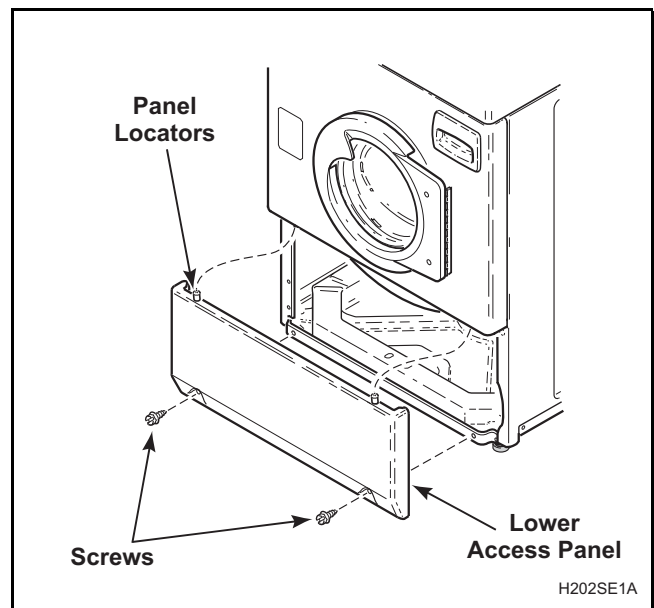


Figure 26



## WARNING

To reduce the risk of electric shock, fire, explosion, serious injury or death:

- Disconnect electric power to the washer before servicing.
- Never start the washer with any guards/panels removed.
- Whenever ground wires are removed during servicing, these ground wires must be reconnected to ensure that the washer is properly grounded.

W003

### 51. ELECTRIC DRAIN PUMP

- While supporting the lower access panel, remove two screws from bottom edge of lower access panel. Refer to *Figure 26*.
- Gently lower the access panel to disengage panel locators from bottom edge of front panel.

**IMPORTANT:** There will always be some water that will remain in the pump and hoses. Therefore, before removing hoses from pump, hoses must be drained to prevent water spillage.

- Loosen hose clamps and remove three hoses connected to electric drain pump (outer tub-to-pump hose, vent hose and drain hose). Refer to *Figure 27*.
- Disconnect wires from drain pump.

**NOTE:** Refer to wiring diagram when rewiring drain pump.

- Remove 3 mounting screws holding pump to base and remove pump out through front of washer. Refer to *Figure 27*.

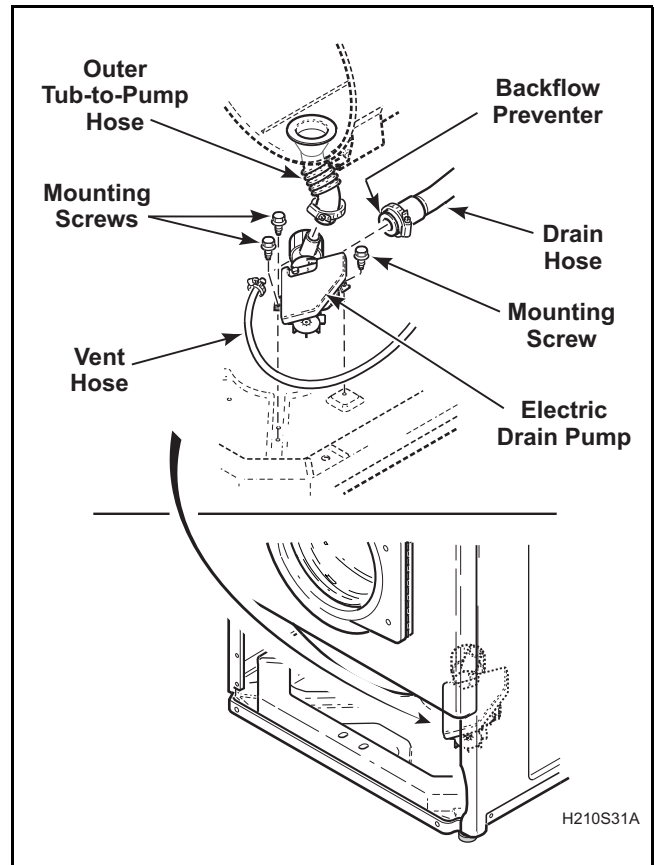


Figure 27



## WARNING

To reduce the risk of electric shock, fire, explosion, serious injury or death:

- Disconnect electric power to the washer before servicing.
- Never start the washer with any guards/panels removed.
- Whenever ground wires are removed during servicing, these ground wires must be reconnected to ensure that the washer is properly grounded.

W003

### 52. BELT

- Unlock control panel. Refer to *Figure 17, Step 1*.
- Pull top of control panel away from control cabinet far enough to allow lifting control panel up and off the rail support of the control cabinet. Refer to *Figure 17, Step 2*.
- Remove control panel away from control cabinet as far as wires permit. Refer to *Figure 17, Step 3*.
- Remove two screws holding front of cabinet top to top front edge of control cabinet front. Refer to *Figure 19*.
- If area or space permits, lift cabinet top to a vertical position by hinging it on the rear hinges.

**NOTE:** To avoid damage to hinges, be sure to support cabinet top with a small chain or something similar. Refer to *Figure 21*.

- Run belt off cylinder pulley while slowly turning pulley. Refer to *Figure 28*.
- Remove belt from motor shaft.

**NOTE:** When installing belt, adjust belt tension per *Paragraph 66*.

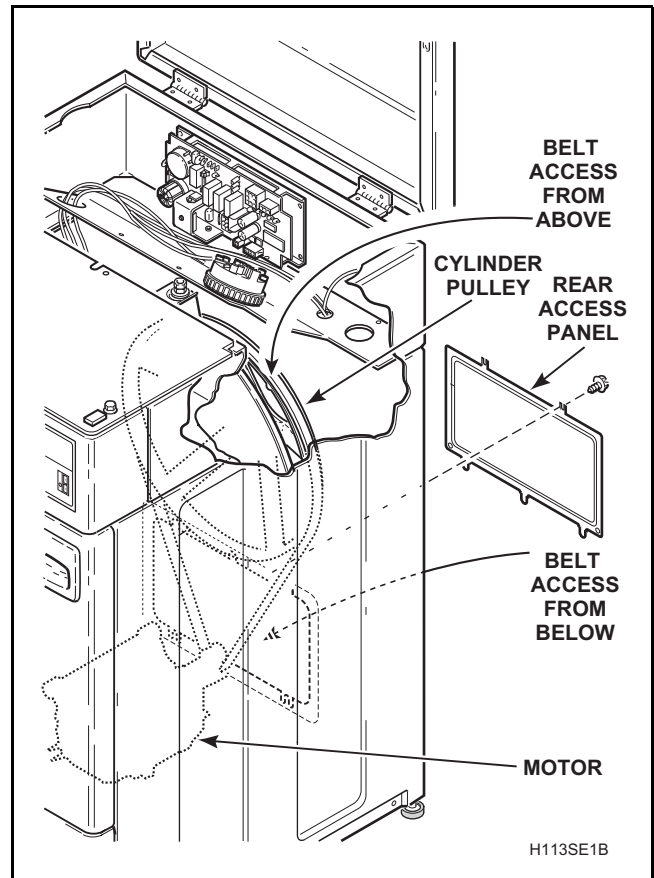


Figure 28

H113SE1B



## WARNING

To reduce the risk of electric shock, fire, explosion, serious injury or death:

- Disconnect electric power to the washer before servicing.
- Never start the washer with any guards/panels removed.
- Whenever ground wires are removed during servicing, these ground wires must be reconnected to ensure that the washer is properly grounded.

W003

### 53. MIXING VALVE

- a. Unlock control panel. Refer to *Figure 17, Step 1*.
- b. Pull top of control panel away from control cabinet far enough to allow lifting control panel up and off the rail support of the control cabinet. Refer to *Figure 17, Step 2*.
- c. Remove control panel away from control cabinet as far as wires permit. Refer to *Figure 17, Step 3*.
- d. Remove two screws holding front of cabinet top to top front edge of control cabinet front. Refer to *Figure 19*.
- e. If area or space permits, lift cabinet top to a vertical position by hinging it on the rear hinges.

**NOTE: To avoid damage to hinges, be sure to support cabinet top with a small chain or something similar. Refer to *Figure 21*.**

- f. Mixing valve is located on upper back right corner of rear panel. Refer to *Figure 29*.
- g. Shut off external hot and cold water supply and remove two inlet hoses.
- h. Loosen hose clamp and remove mixing valve-to-dispenser hose at the mixing valve. Refer to *Figure 29*.
- i. Remove wire harness disconnect blocks from mixing valve solenoid terminals. Refer to *Figure 29*.

**NOTE: Refer to wiring diagram when rewiring solenoids.**

- j. Go to rear of washer and remove screw holding mixing valve and plate to rear panel, then remove valve and plate out through opening in rear panel. Refer to *Figure 29*.
- k. Remove screws holding valve to mixing valve plate. Refer to *Figure 29*.

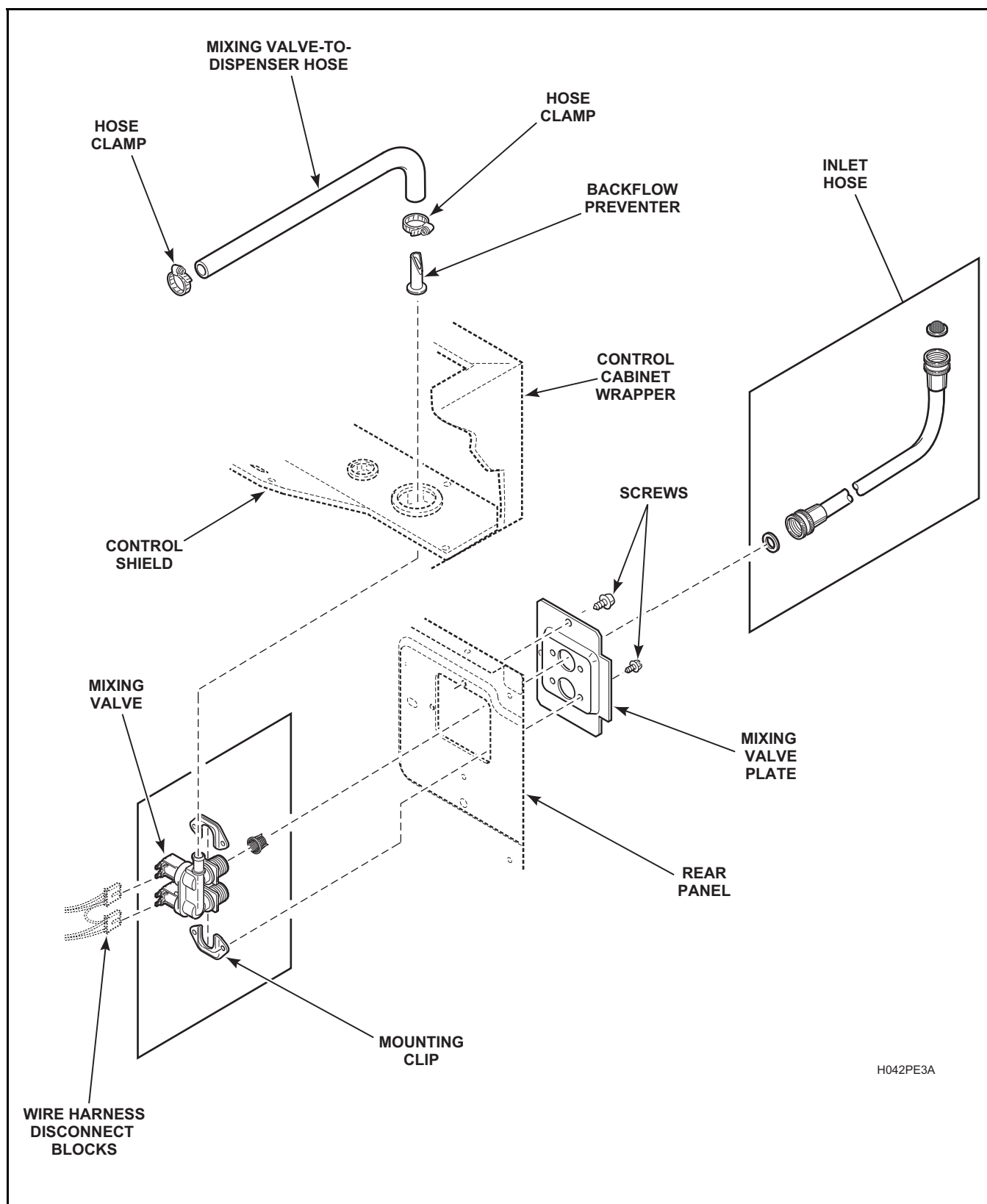


Figure 29



## WARNING

To reduce the risk of electric shock, fire, explosion, serious injury or death:

- Disconnect electric power to the washer before servicing.
- Never start the washer with any guards/panels removed.
- Whenever ground wires are removed during servicing, these ground wires must be reconnected to ensure that the washer is properly grounded.

W003

### 54. FRONT PANEL

- Unlock control panel. Refer to *Figure 17, Step 1*.
- Pull top of control panel away from control cabinet far enough to allow lifting control panel up and off the rail support of the control cabinet. Refer to *Figure 17, Step 2*.
- Remove control panel away from control cabinet as far as wires permit. Refer to *Figure 17, Step 3*.
- Working through control panel opening, remove two screws holding bottom flange of control cabinet front to top flange of front panel.
- While supporting lower access panel, remove two screws from bottom edge of lower access panel. Refer to *Figure 26*.
- Gently lower access panel to disengage panel locators from bottom edge of front panel.
- Using the special tool, No. 318P4, remove the dispenser drawer. Refer to *Figure 30*.
- Remove bottom two front panel attaching screws. Refer to *Figure 31*.

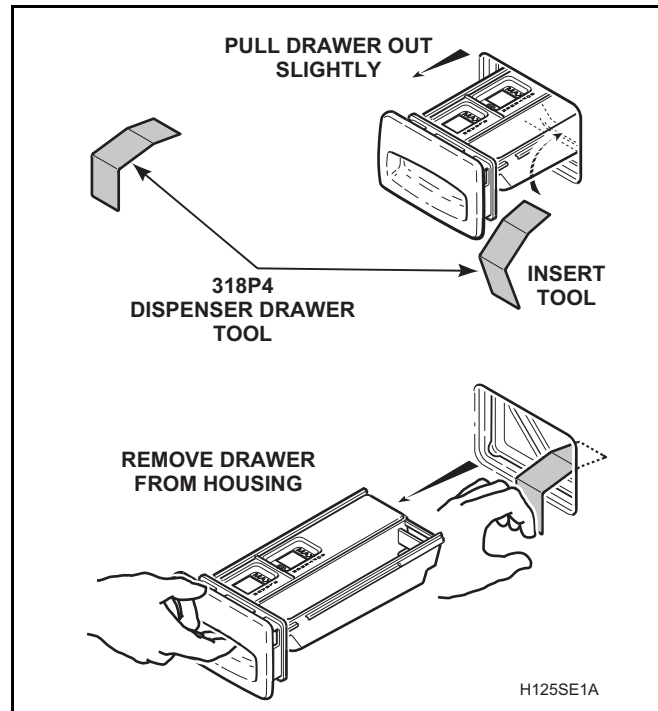


Figure 30

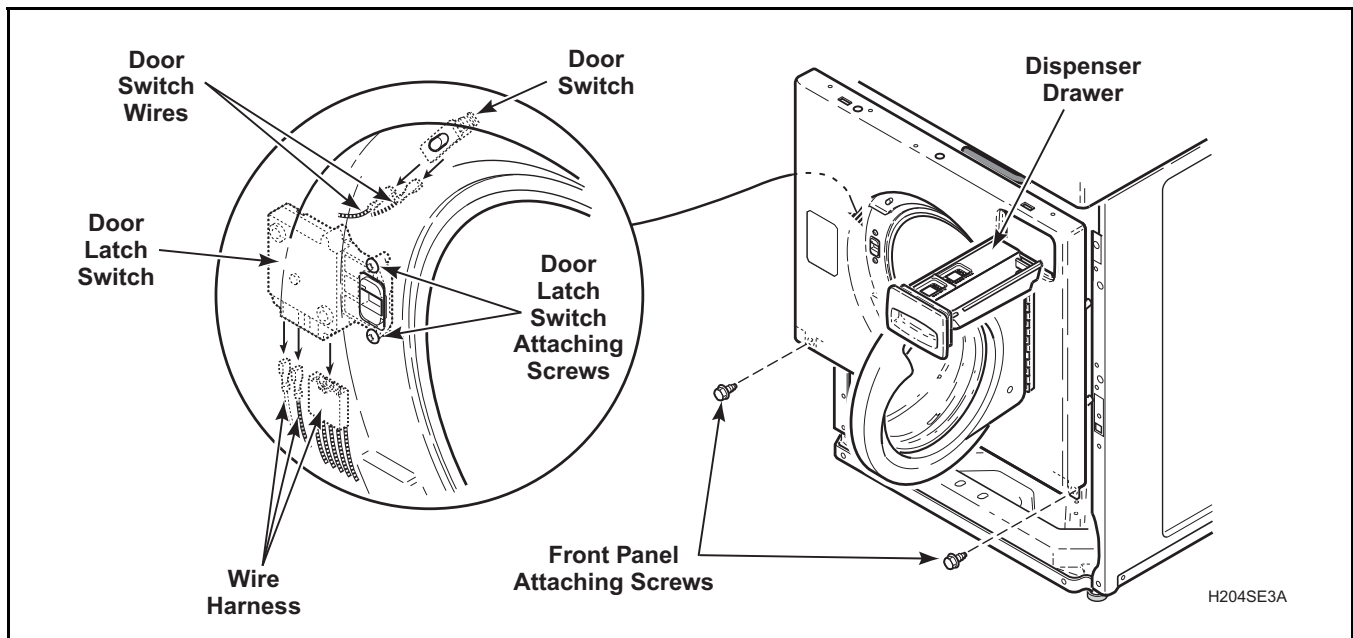


Figure 31



## WARNING

To reduce the risk of electric shock, fire, explosion, serious injury or death:

- Disconnect electric power to the washer before servicing.
- Never start the washer with any guards/panels removed.
- Whenever ground wires are removed during servicing, these ground wires must be reconnected to ensure that the washer is properly grounded.

W003

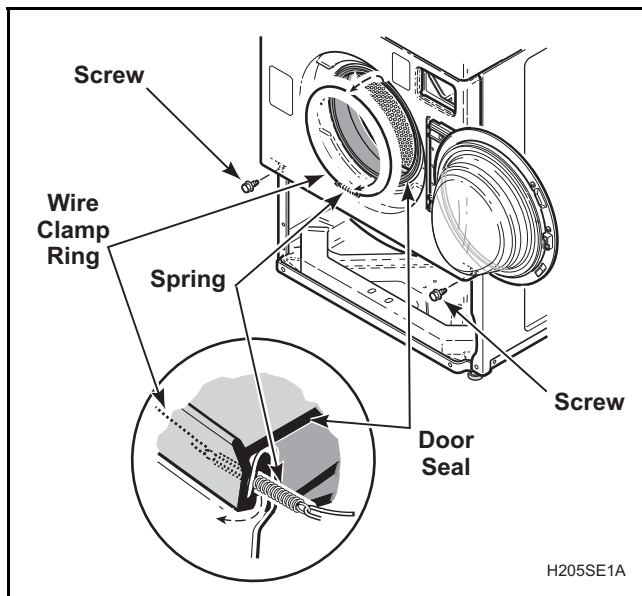


Figure 32

- Open loading door. Carefully remove wire clamp ring from groove with small flat screwdriver. Spring is in 6 o'clock position. Refer to *Figure 32*.

**NOTE:** To avoid damage to spring, use screwdriver on wire clamp ring to the right or left of spring.

- Grasp loading door seal lip. Refer to *Figure 33*, Step 1.

**NOTE:** To avoid damage to door seal, DO NOT use pliers or sharp objects to grasp the door seal lip. If lip is damaged, seal will leak.

- Using a circular motion, pull seal up (*Figure 33*, Step 1), out (*Figure 33*, Step 2) and down (*Figure 33*, Step 3).
- When seal releases from lip of front panel, pull out and remove the seal. Refer to *Figure 33*, Step 4.

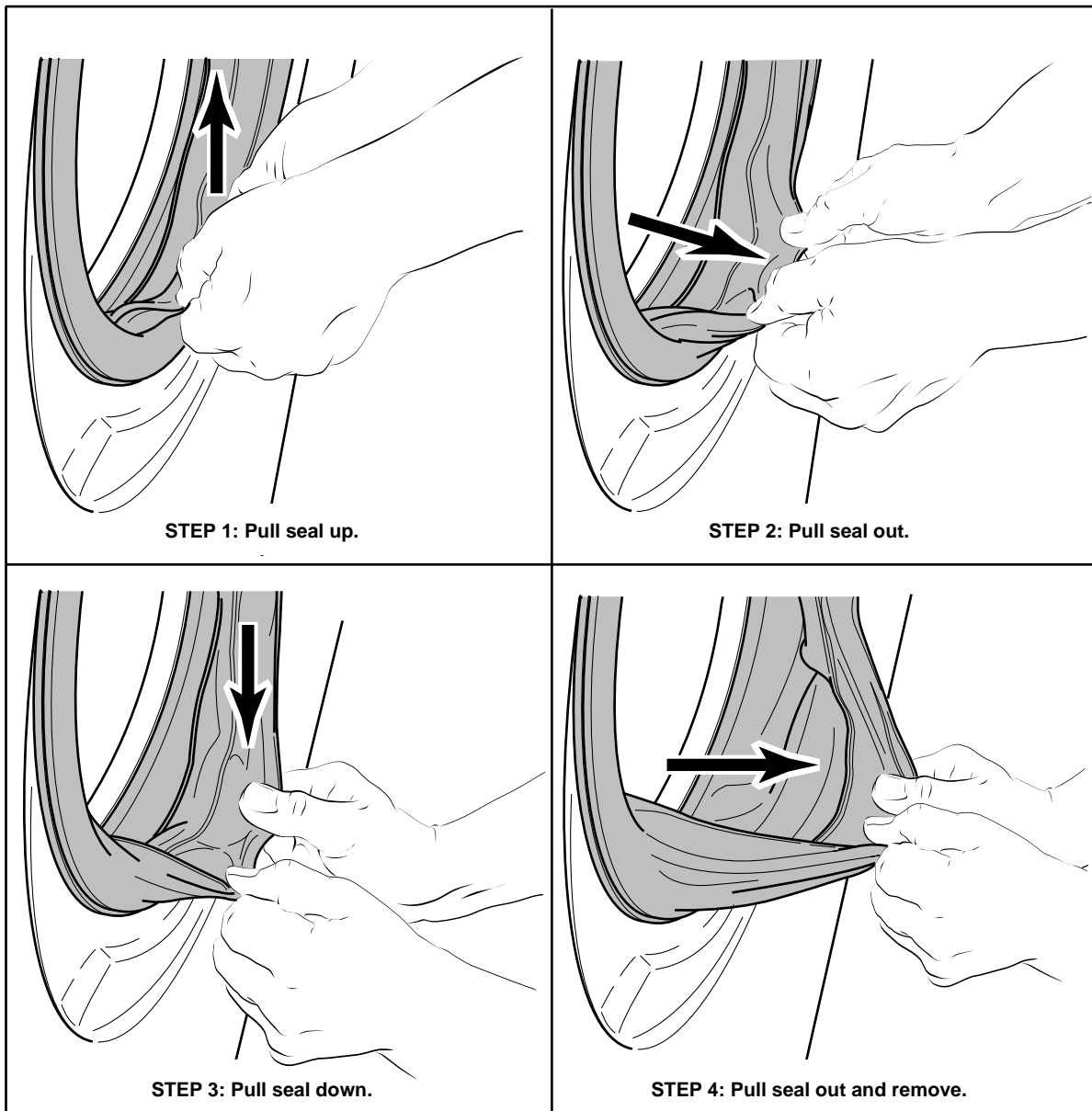
**NOTE:** The ease of installation of the loading door seal can be improved using water or soapy solution to work seal around circumference of loading door. Be sure to orientate seal with the tab in the 12 o'clock position when installing the wire clamp ring to front panel. Be careful not to overstretch tension spring.

- Remove front panel (with loading door attached) away from washer as far as wires permit.
- Unplug wire harness from both the door latch switch and from the door switch. Refer to *Figure 31*. Remove clips holding wire harness and door seal hose along top flange of front panel and remove front panel.

**NOTE:** Door seal hose and wire harness must be reinstalled in the appropriate clips and holes along top flange of front panel. Refer to *Figure 35*.

**IMPORTANT:** Before reinstalling door and front panel assembly, make sure the door catch lines up with the door latch switch. If adjustment is required, refer to *Paragraph 67*.





FLW1190B

Figure 33



## WARNING

To reduce the risk of electric shock, fire, explosion, serious injury or death:

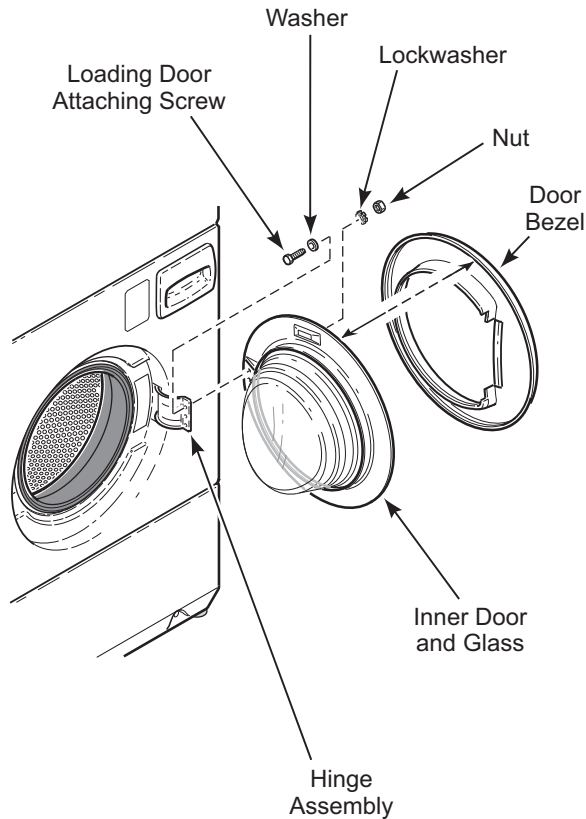
- Disconnect electric power to the washer before servicing.
- Never start the washer with any guards/panels removed.
- Whenever ground wires are removed during servicing, these ground wires must be reconnected to ensure that the washer is properly grounded.

W003

### 55. LOADING DOOR

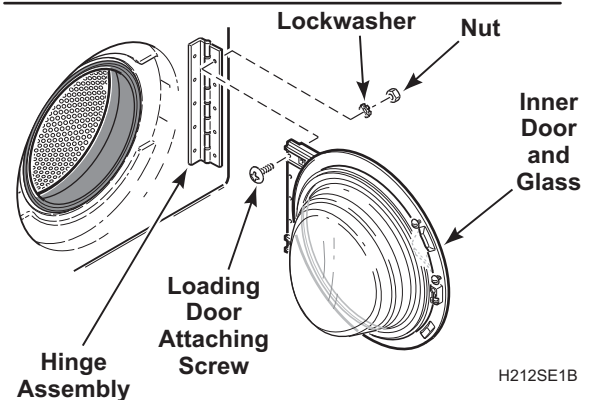
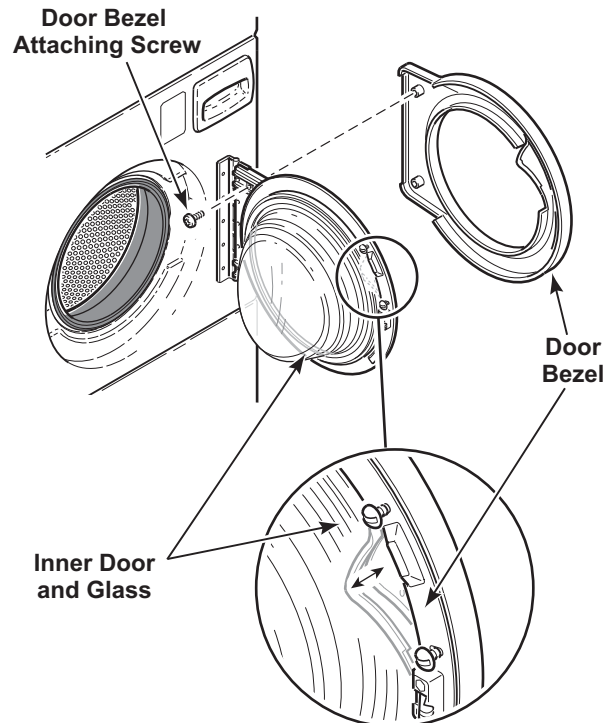
- Open loading door.
- Remove door bezel to gain access to nuts. Refer to *Figure 34*.

- Remove screws, washers and nuts holding loading door to hinge assembly and remove door. Refer to *Figure 34*.



H211SE1B

**MODELS WITH THE LETTER “E” IN THE EIGHTH CHARACTER OF THE MODEL NUMBER**



H212SE1B

**MODELS WITH THE LETTER “H” OR “J” IN THE EIGHTH CHARACTER OF THE MODEL NUMBER**

Figure 34



## WARNING

To reduce the risk of electric shock, fire, explosion, serious injury or death:

- Disconnect electric power to the washer before servicing.
- Never start the washer with any guards/panels removed.
- Whenever ground wires are removed during servicing, these ground wires must be reconnected to ensure that the washer is properly grounded.

W003

### 56. DOOR SEAL AND HOSE ASSEMBLY

- a. Unlock control panel. Refer to *Figure 17, Step 1*.
- b. Pull top of control panel away from control cabinet far enough to allow lifting control panel up and off the rail support of the control cabinet. Refer to *Figure 17, Step 2*.
- c. Remove control panel away from control cabinet as far as wires permit. Refer to *Figure 17, Step 3*.
- d. Remove two screws holding front of cabinet top to top front edge of control cabinet front. Refer to *Figure 19*.
- e. If area or space permits, lift cabinet top to a vertical position by hinging it on the rear hinges.

**NOTE: To avoid damage to hinges, be sure to support cabinet top with a small chain or something similar. Refer to *Figure 21*.**

- f. Remove screws and carriage bolt holding security top panel to control cabinet front. Refer to *Figure 21*. Slide security top panel back just far enough to disengage tabs on panel from control cabinet front.
- g. Reach in through control panel opening and remove two screws holding bottom front flange of control cabinet front to top flange of washer front panel. Refer to *Figure 19*.
- h. Remove two screws on top right side of front panel (above dispenser drawer).
- i. While supporting lower access panel, remove two screws from bottom edge of lower access panel. Refer to *Figure 26*.
- j. Gently lower access panel to disengage panel locators from bottom edge of front panel.
- k. Using the special tool, No. 318P4, remove dispenser drawer. Refer to *Figure 30*.
- l. Open loading door. Carefully remove wire clamp ring from groove with small flat screwdriver. Spring is in 6 o'clock position. Refer to *Figure 32*.

**NOTE: To avoid damage to spring, use screwdriver on wire clamp ring to the right or left of spring.**

- m. Grasp loading door seal lip. Refer to *Figure 33, Step 1*.

**NOTE: To avoid damage to door seal, DO NOT use pliers or sharp objects to grasp the door seal lip. If lip is damaged, seal will leak.**

- n. Using a circular motion, pull seal up (*Figure 33, Step 1*), out (*Figure 33, Step 2*) and down (*Figure 33, Step 3*).
- o. When seal releases from lip of front panel, pull out and remove the seal. Refer to *Figure 33, Step 4*.
- p. While supporting the front panel assembly, remove the two bottom front corner screws. Refer to *Figure 31*. Remove front panel (with loading door attached) away from washer as far as wire permit.
- q. Unplug wire harness from both the door latch switch and from the door switch. Refer to *Figure 31*. Remove clips holding wire harness and door seal hose along top flange of front panel and remove front panel.
- r. Loosen hose clamp and remove door seal hose connection at the dispenser. Refer to *Figure 35*.

**IMPORTANT: When installing door seal hose, pull hose tie tight to prevent damage. Refer to *Figure 35*.**

- s. Loosen large clamp holding seal to front of outer tub. Slide seal off front of outer tub and remove seal.

**NOTE: The ease of installation of loading door seal can be improved using water or soap solution to work seal around the circumference of loading door. Be sure to orientate seal with tab in the 12 o'clock position when installing wire clamp ring to the front panel. Be careful not to overstretch tension spring.**

### 57. DOOR SWITCH

- a. Open loading door.
- b. Carefully remove wire clamp ring from groove with small flat screwdriver. Spring is located in the 6 o'clock position.



## WARNING

To reduce the risk of electric shock, fire, explosion, serious injury or death:

- Disconnect electric power to the washer before servicing.
- Never start the washer with any guards/panels removed.
- Whenever ground wires are removed during servicing, these ground wires must be reconnected to ensure that the washer is properly grounded.

W003

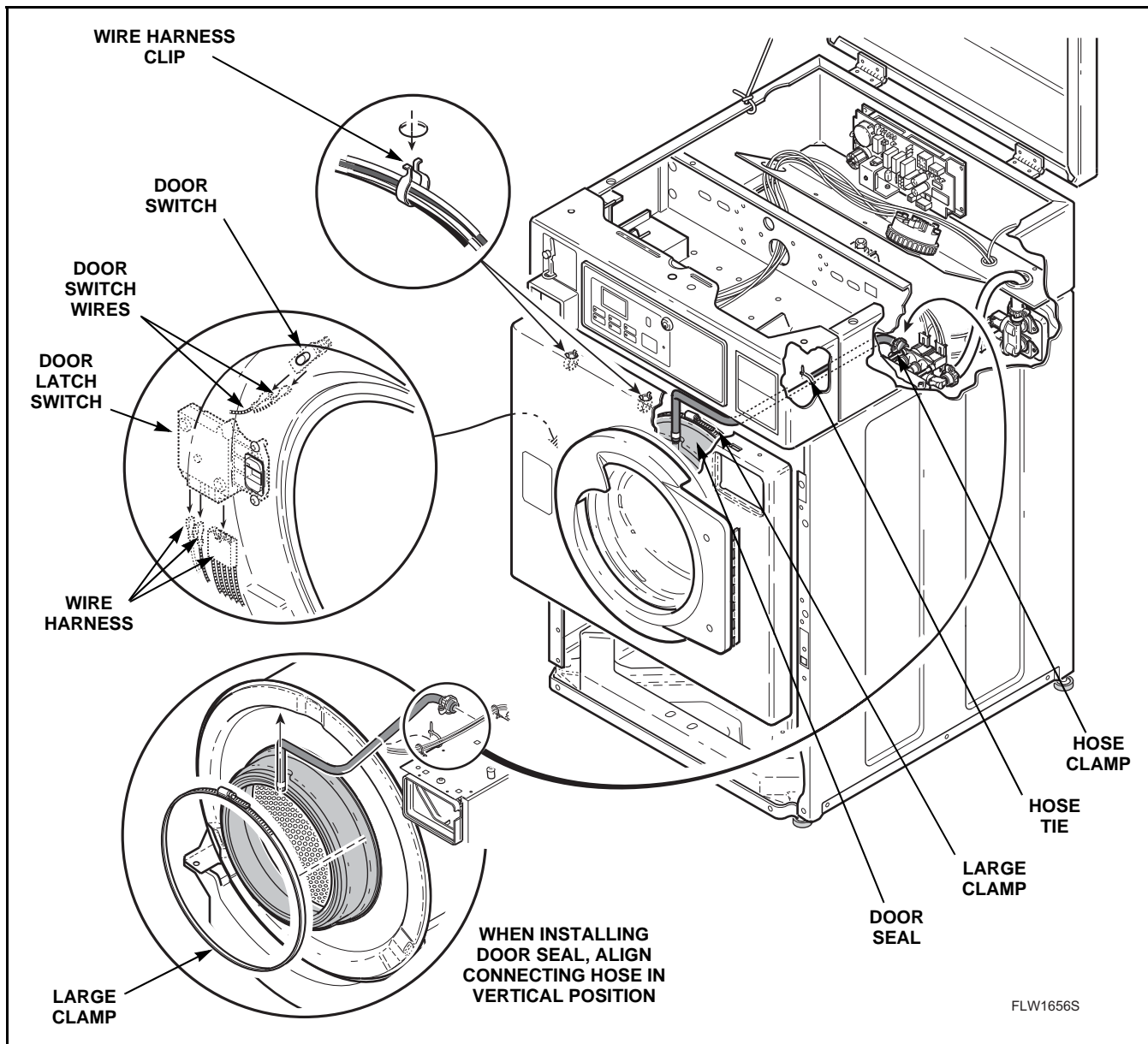


Figure 35

**NOTE:** To avoid damage to spring, use screwdriver on wire clamp ring to the right or left of spring.

- c. Grasp loading door seal lip. Refer to *Figure 33*, Step 1.

**NOTE:** To avoid damage to door seal, **DO NOT** use pliers or sharp objects to grasp the door seal lip. If lip is damaged, seal will leak.



## WARNING

To reduce the risk of electric shock, fire, explosion, serious injury or death:

- Disconnect electric power to the washer before servicing.
- Never start the washer with any guards/panels removed.
- Whenever ground wires are removed during servicing, these ground wires must be reconnected to ensure that the washer is properly grounded.

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- Using a circular motion, pull seal up (*Figure 33*, Step 1), out (*Figure 33*, Step 2) and down (*Figure 33*, Step 3).
- When seal releases from lip of front panel, pull out and remove the seal from half of the door opening. Refer to *Figure 33*, Step 4.
- Reach up between door seal and front panel. Refer to *Figure 31*. Press in on switch locking tabs and push switch out through front panel only far enough to allow removal of wires from switch terminals.

**IMPORTANT:** Refer to wiring diagram when rewiring switch.

### 58. DOOR LATCH SWITCH

- Open loading door.
- Carefully remove wire clamp ring from groove with small flat blade screwdriver. Spring is located in the 6 o'clock position. Refer to *Figure 32*.

**NOTE:** To avoid damage to spring, use screwdriver on wire clamp ring to the right or left of spring.

- Grasp loading door seal lip. Refer to *Figure 33*, Step 1.

**NOTE:** To avoid damage to door seal, **DO NOT** use pliers or sharp objects to grasp the door seal lip. If lip is damaged, seal will leak.

- Using a circular motion, pull seal up (*Figure 33*, Step 1), out (*Figure 33*, Step 2) and down (*Figure 33*, Step 3).
- When seal releases from lip of front panel, pull out and remove the seal. Refer to *Figure 33*, Step 4.
- While supporting door lock from behind (through door opening), remove two Phillips head screws holding door latch switch to front panel. Refer to *Figure 36*.
- Gently pull door lock out through door opening. Remove door lock only far enough to disconnect harness connector from door lock. Refer to *Figure 36*.

**NOTE:** When installing new door lock, be sure to install small lip through mounting hole first and then rotate lock into position.

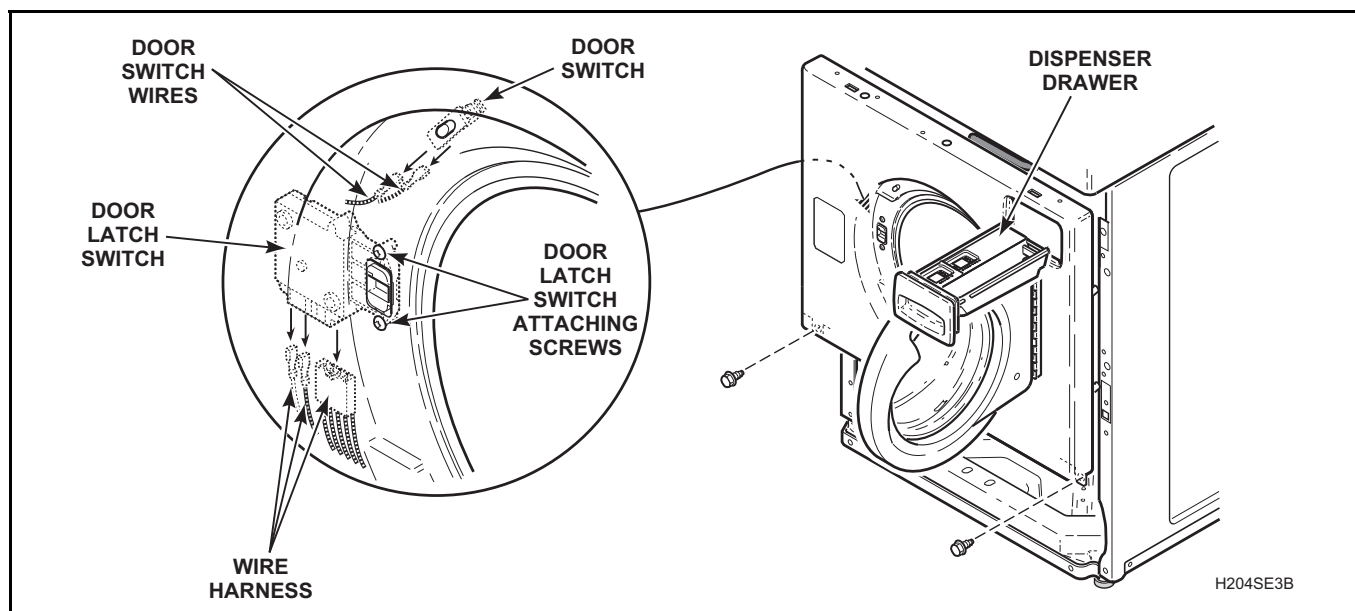


Figure 36



## WARNING

To reduce the risk of electric shock, fire, explosion, serious injury or death:

- Disconnect electric power to the washer before servicing.
- Never start the washer with any guards/panels removed.
- Whenever ground wires are removed during servicing, these ground wires must be reconnected to ensure that the washer is properly grounded.

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### 59. MOTOR

**NOTE: Motor is removed out through front of washer, however, as an option, motor can be removed out through rear access panel opening.**

- a. Unlock control panel. Refer to *Figure 17, Step 1*.
- b. Pull top of control panel away from control cabinet far enough to allow lifting control panel up and off the rail support of the control cabinet. Refer to *Figure 17, Step 2*.
- c. Remove control panel away from control cabinet as far as wires permit. Refer to *Figure 17, Step 3*.
- d. Remove two screws holding front of cabinet top to top front edge of control cabinet front. Refer to *Figure 19*.
- e. If area or space permits, lift cabinet top to a vertical position by hinging it on the rear hinges.

**NOTE: To avoid hinge damage, be sure to support cabinet top with a small chain or something similar. Refer to *Figure 21*.**

- f. Run belt off pulley while slowly turning pulley.
- g. Remove belt from motor shaft.
- h. While supporting lower front access panel, remove two screws from bottom edge of panel. Refer to *Figure 26*.
- i. Gently lower front access panel to disengage panel locators from bottom edge of front panel. Refer to *Figure 26*.

**IMPORTANT: Use a magic marker and outline the washer on the front or rear adjusting screw holding motor to the stainless steel motor bracket. Refer to *Figure 37*. This will help relocate motor within the motor bracket when reinstalling motor.**

- j. Remove screw holding ground wire to motor frame. Refer to *Figure 37*.
- k. Cut the wire tie holding small harness connector to motor, then disconnect both motor harness connectors from motor.

- l. While supporting the motor, grasp the metal rod with a locking pliers and remove four bolts and washers holding motor to motor bracket, refer to *Figure 37*, and remove motor out through front of washer.

**NOTE: Remove the back bolts and washers first, then remove the front bolts and washers.**

- m. Place new motor into washer and allow motor to rest on washer base.
- n. Reconnect harness connector to new motor and reinstall screw holding ground wire to motor frame. Refer to *Figure 37*.
- o. Install new wire tie holding small harness connector to motor frame. This is necessary to prevent future service calls.
- p. Lift motor into position within the motor bracket and install the front pivot bolt and washer. Refer to *Figure 37*. Then install the rear pivot bolt and washer. Leave bolt snug, do not tighten.
- q. Pivot motor up into motor bracket and install the front adjusting bolt and washer. Refer to *Figure 37*. Then install rear adjusting bolt and washer. Leave bolts snug.

**NOTE: Locate the magic marker spot made earlier on the motor bracket. Pivot motor so front adjusting bolt and washer are in this spot and tighten both front and rear adjusting bolts. Then tighten both pivot bolts.**

- r. Place belt on motor pulley, then carefully run belt on cylinder pulley while slowly turning pulley.
- s. Open loading door, reach into cylinder and rotate cylinder several times by hand. Recheck belt alignment.
- t. Reinstall lower front access panel. Refer to *Figure 26*.
- u. Lower cabinet top and install hold-down screws.
- v. Reinstall control panel and lock.

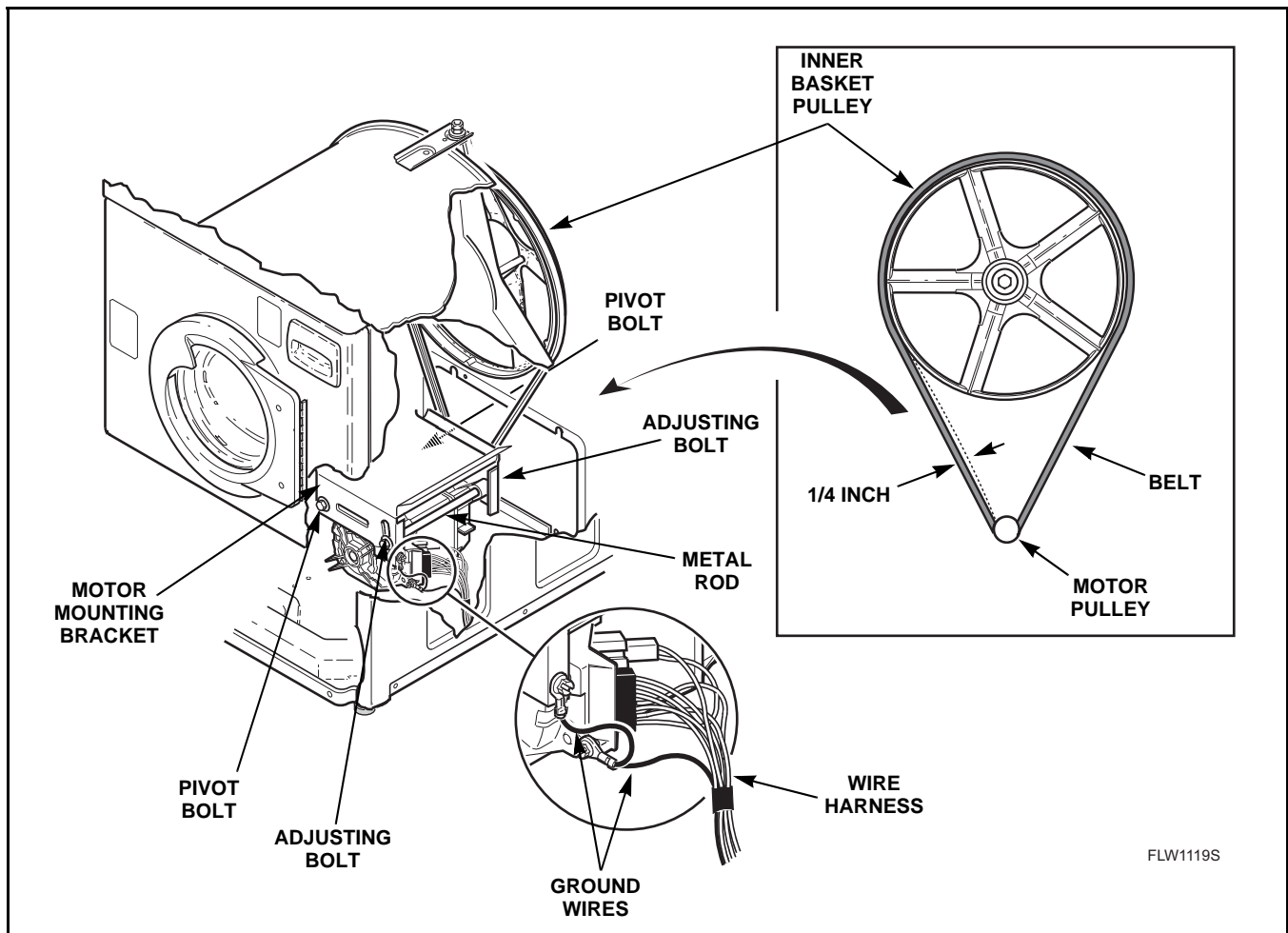


## WARNING

To reduce the risk of electric shock, fire, explosion, serious injury or death:

- Disconnect electric power to the washer before servicing.
- Never start the washer with any guards/panels removed.
- Whenever ground wires are removed during servicing, these ground wires must be reconnected to ensure that the washer is properly grounded.

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FLW1119S

Figure 37

### 60. OUTER TUB FRONT PANEL

- Unlock control panel. Refer to *Figure 17, Step 1*.
- Pull top of control panel away from control cabinet far enough to allow lifting control panel up and off rail support of the control cabinet. Refer to *Figure 17, Step 2*.
- Remove control panel away from control cabinet. Refer to *Figure 17, Step 3*.
- Remove 2 screws holding front of cabinet top to top front edge of control cabinet front. Refer to *Figure 19*.
- Working through control panel opening, remove 2 screws holding bottom flange of control cabinet front to top flange of front panel. Refer to *Figure 23*.
- If area or space permits, lift cabinet top to a vertical position by hinging top on the rear hinges.

**NOTE:** To avoid damage to hinges, be sure to support cabinet top with a small chain or something similar. Refer to *Figure 21*.





## WARNING

To reduce the risk of electric shock, fire, explosion, serious injury or death:

- Disconnect electric power to the washer before servicing.
- Never start the washer with any guards/panels removed.
- Whenever ground wires are removed during servicing, these ground wires must be reconnected to ensure that the washer is properly grounded.

W003

- g. While supporting lower front access panel, remove 2 screws from bottom edge of panel. Refer to *Figure 26*.
- h. Gently lower access panel to disengage panel locators from bottom edge of front panel. Refer to *Figure 26*.
- i. Remove screws holding security top panel to control cabinet. Slide security top panel just far enough to disengage tabs on panel from control cabinet front and remove panel. Refer to *Figure 21*.
- j. Remove dispenser drawer using the special tool, No. 318P4. Refer to *Figure 30*.
- k. Open loading door, carefully remove wire clamp ring from groove with small flat blade screwdriver. Spring is located at 6 o'clock position. Refer to *Figure 32*.

**NOTE: To avoid damage to spring, use screwdriver on wire clamp ring to the right or left of spring.**

- l. Grasp loading door seal lip. Refer to *Figure 33*, Step 1.

**NOTE: To avoid damage to door seal, DO NOT use pliers or sharp objects to grasp the door seal lip. If lip is damaged, seal will leak.**

- m. Using a circular motion, pull seal up (*Figure 33*, Step 1), out (*Figure 33*, Step 2) and down (*Figure 33*, Step 3).
- n. When seal releases from lip of front panel, pull out and remove the seal. Refer to *Figure 33*, Step 4.

**NOTE: Door seal installation can be improved using water or soap solution to work seal around circumference of loading door opening. Be sure to orientate seal with the tab in the 12 o'clock position. When installing wire clamp ring to front panel, be careful not to overstretch tension spring.**

- o. Remove front panel (with loading door attached) away from washer as far as wires permit.

- p. Unplug wire harness from both the door latch switch and from the door switch. Refer to *Figure 31*. Remove clips holding wire harness and door seal hose along top flange of front panel and remove front panel.

**NOTE: The large wire clip holds both the wire harnesses and the door seal hose.**

- q. Loosen hose clamp and remove dispenser valve-to-door seal hose connection at the dispenser. Refer to *Figure 35*.

**IMPORTANT: When installing door seal hose, pull hose tie tight to prevent damage. Refer to *Figure 35*.**

- r. Loosen large clamp holding door seal to front of outer tub. Carefully pull seal off front lip of outer tub front panel and remove door seal and hose. Refer to *Figure 35*.

**NOTE: Door seal installation can be improved using water or soap solution to work seal around circumference of loading door opening. Be sure to orientate seal with the tab in the 12 o'clock position.**

- s. Disconnect ground wire from outer tub front panel. Refer to *Figure 38*.
- t. Remove nut, washers and screw holding clamp ring to outer tub front panel. Refer to *Figure 38*.
- u. Remove rubber seal from outer tub front panel and discard seal.

**IMPORTANT: Always replace seal with a new seal. Spray or apply a mixture of diluted laundry detergent to assist in installation of new seal. The "puffy" side of seal should be installed to the inside. For best results, tap clamp ring all around while tightening screw and nut.**

**NOTE: Install metal clamp ring by placing clamp ring opening at approximately the 10 o'clock position to ensure that no interference is encountered with side panel or the under side of the control cabinet. Tighten the clamp ring screw and nut until a spacing of one inch is achieved at the clamp ring opening or until tight.**





## WARNING

To reduce the risk of electric shock, fire, explosion, serious injury or death:

- Disconnect electric power to the washer before servicing.
- Never start the washer with any guards/panels removed.
- Whenever ground wires are removed during servicing, these ground wires must be reconnected to ensure that the washer is properly grounded.

W003

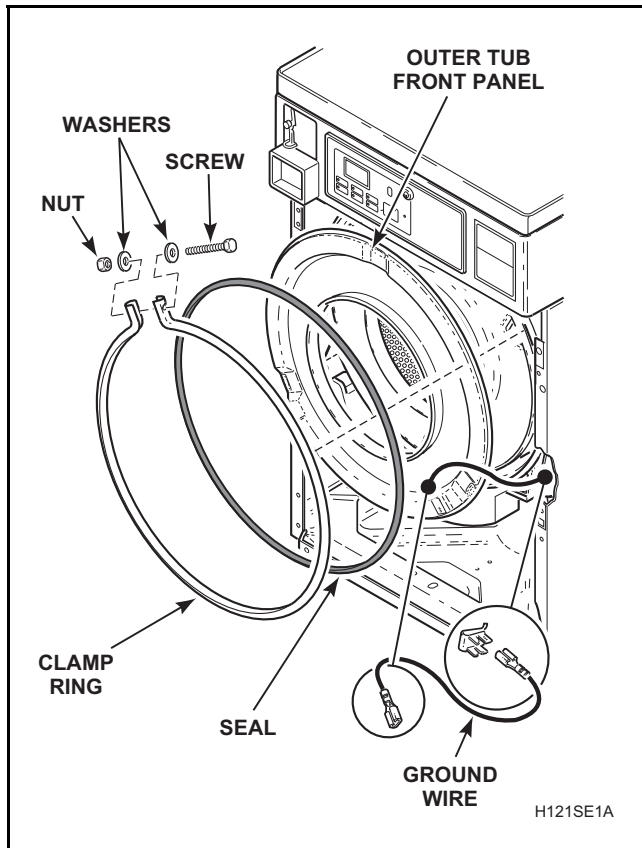


Figure 38

### 61. INNER BASKET PULLEY

- Unlock control panel. Refer to *Figure 17, Step 1*.
- Pull top of control panel away from control cabinet far enough to allow lifting control panel up and off rail support of the control cabinet. Refer to *Figure 17, Step 2*.
- Remove control panel away from control cabinet as far as wires permit. Refer to *Figure 17, Step 3*.
- Remove two screws holding front of cabinet top to top front edge of control cabinet front. Refer to *Figure 19*.
- If area or space permits, lift cabinet top to a vertical position by hinging it on the rear hinges.

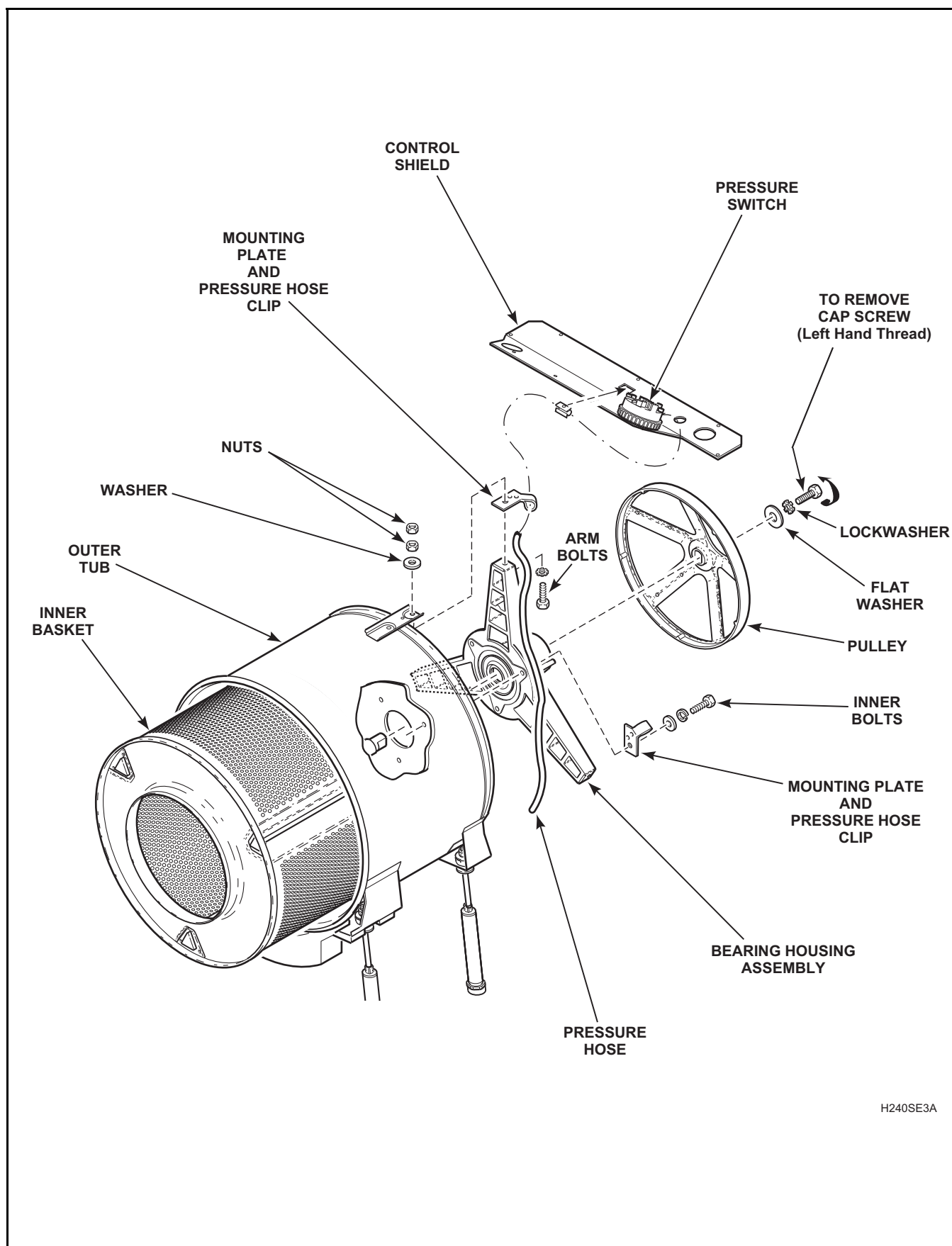
**NOTE:** To avoid hinge damage, be sure to support cabinet top with a small chain or something similar. Refer to *Figure 21*.

- Run belt off pulley while slowly turning pulley.
- Remove belt from motor shaft.
- Remove cap screw (left hand thread) lockwasher and flat washer holding pulley to inner basket shaft. Refer to *Figure 39*.
- Remove pulley from shaft.

**IMPORTANT:** When installing pulley, always use a new cap screw to prevent screw from loosening during operation.

**NOTE:** When installing new cap screw, apply a thread locking compound to screw threads and torque new cap screw to 240 minimum to 260 maximum inch pounds (27.5 to 29.7 Nm).

- After installing belt, adjust belt tension per *Paragraph 66*.



H240SE3A

Figure 39



## WARNING

To reduce the risk of electric shock, fire, explosion, serious injury or death:

- Disconnect electric power to the washer before servicing.
- Never start the washer with any guards/panels removed.
- Whenever ground wires are removed during servicing, these ground wires must be reconnected to ensure that the washer is properly grounded.

W003

### 62. INNER BASKET ASSEMBLY

#### Inner Basket Removal

- Unlock control panel. Refer to *Figure 17, Step 1*.
- Pull top of control panel away from control cabinet far enough to allow lifting control panel up and off rail support of the control cabinet. Refer to *Figure 17, Step 2*.
- Remove control panel away from control cabinet as far as wires permit. Refer to *Figure 17, Step 3*.
- Remove two screws holding front of cabinet top to top front edge of control cabinet front. Refer to *Figure 19*.
- Remove carriage bolts and nuts holding cabinet top and hinges to rear of control cabinet wrapper. Refer to *Figure 20*.
- Carefully lift cabinet top off washer and set alongside washer cabinet on protective padding.
- While supporting lower front access panel, remove two screws from bottom edge of lower access panel. Refer to *Figure 26*.
- Gently lower access panel to disengage panel locators from bottom edge of front panel.
- Run belt off pulley while slowly turning pulley.
- Remove belt from motor shaft.
- Remove cap screw (left hand thread) lockwasher and flat washer holding pulley to inner basket shaft. Refer to *Figure 39*.
- Remove pulley from shaft.

**IMPORTANT:** When installing pulley, always use a new cap screw to prevent screw from loosening during operation.

**NOTE:** When installing new cap screw, apply a thread locking compound to screw threads and torque new cap screw to 240 minimum to 260 maximum inch pounds (27.5 to 29.7 Nm).

- Remove dispenser drawer using special tool, Part No. 318P4. Refer to *Figure 30*.

- Working through the control panel opening, remove two screws holding bottom flange of control cabinet front to top flange of front panel. Refer to *Figure 23*, then remove bottom two corner screws. Refer to *Figure 31*.
- Open loading door. Carefully remove wire clamp ring from groove with small flat blade screwdriver. Spring is located in the 6 o'clock position. Refer to *Figure 32*.

**NOTE:** To avoid damage to spring, use screwdriver on wire clamp ring to the right or left of spring.

- Grasp loading door seal lip. Refer to *Figure 33, Step 1*.

**NOTE:** To avoid damage to door seal, DO NOT use pliers or sharp objects to grasp the door seal lip. If lip is damaged, seal will leak.

- Using a circular motion, pull seal up (*Figure 33, Step 1*), out (*Figure 33, Step 2*) and down (*Figure 33, Step 3*).
- When seal releases from lip of front panel, pull out and remove the seal. Refer to *Figure 33, Step 4*.
- Remove front panel (with loading door attached) away from washer as far as wires permit.
- Unplug wire harness from both the door latch switch and from the door switch. Refer to *Figure 31*. Remove clips holding wire harness and door seal hose along top flange of front panel and remove front panel.

**NOTE:** Refer to wiring diagram when rewiring door switch.

- Loosen clamp and remove dispenser valve-to-door seal hose at dispenser. Refer to *Figure 35*.

**IMPORTANT:** When installing door seal hose, pull hose tie tight to prevent damage. Refer to *Figure 35*.

- Loosen clamp and remove door seal off front of outer tub. Refer to *Figure 35*.
- Disconnect ground wire from outer tub front panel. Refer to *Figure 38*.



## WARNING

To reduce the risk of electric shock, fire, explosion, serious injury or death:

- Disconnect electric power to the washer before servicing.
- Never start the washer with any guards/panels removed.
- Whenever ground wires are removed during servicing, these ground wires must be reconnected to ensure that the washer is properly grounded.

W003

- x. Remove nut, washers and screw holding clamp ring to outer tub front panel. Refer to *Figure 38*.
- y. Remove rubber seal from outer tub front panel and discard.

**IMPORTANT:** Always replace seal with a new seal. Spray or apply a mixture of diluted laundry detergent to assist in installation of new seal. The “puffy” side of seal should be installed to the inside. For best results, tap clamp ring all around while tightening screw and nut.

**NOTE:** Install metal clamp ring by placing clamp ring opening at approximately the 10 o'clock position to ensure that no interference is encountered with side panel or the underside of the control cabinet. Tighten the clamp ring screw and nut until a spacing of one inch is achieved at the clamp ring opening or until tight.

- z. Carefully remove inner basket out through front of washer.

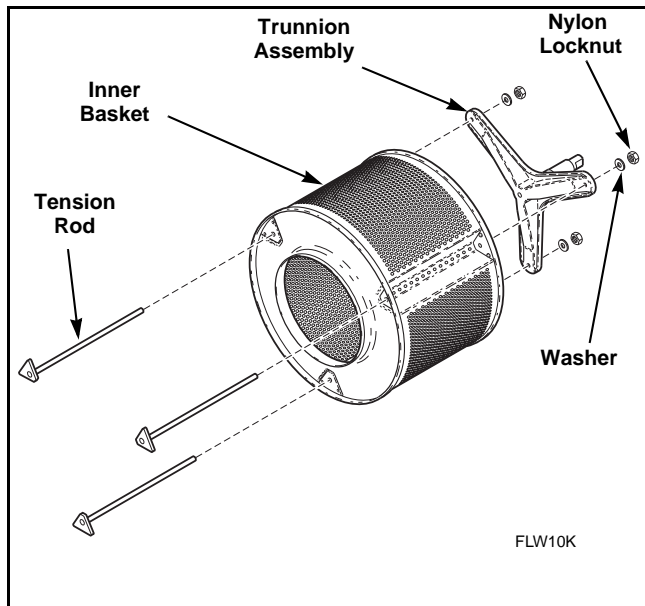


Figure 40

### Installing 800749P Trunnion Kit or 800198P Inner Basket Kit –

- a. Remove nuts, washers and tension rods holding trunnion to inner basket. Refer to *Figure 40*.

- b. If using existing trunnion, clean out old Loctite from pulley bolt threads using a 3/8-24 UNF Left Hand Tap.
- c. Dip threads of three new tension rods into lightweight oil.
- d. Insert tension rods into inner basket. Refer to *Figure 40*. Position each rod so the rounded corner of triangular head faces the center of inner basket. Refer to *Figure 41*.
- e. Position trunnion assembly through rods and onto inner basket.
- f. Attach three washers and three new nylon locknuts onto rods. Leave the nuts loose.

**IMPORTANT:** Always use new nylon locknuts.

- g. Carefully center trunnion on basket and torque nuts to about 50 inch-pounds.
- h. Install inner basket/trunnion assembly into washer. Do not bolt down at this time.

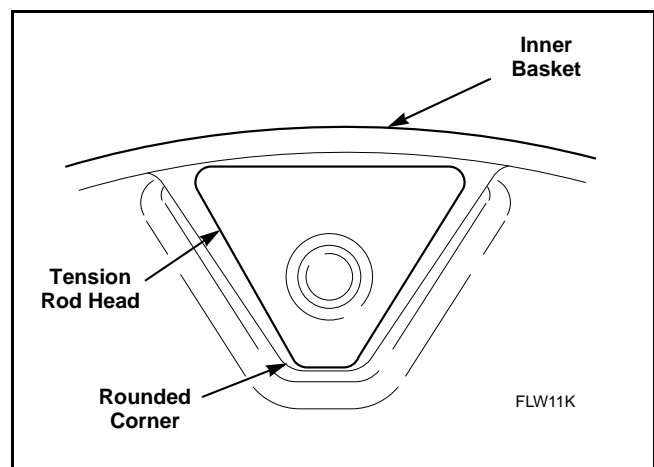


Figure 41

- i. Check for concentricity/roundness of assembly. Use a dial indicator to check that concentricity at the inside edge of inner basket lip is a maximum of .05 inch TIR (Total Indicator Runout). Refer to *Figure 42*. If concentricity is not within .05 inch, remove assembly from washer and adjust location of trunnion. Repeat until concentricity is within .05 inch.



## WARNING

To reduce the risk of electric shock, fire, explosion, serious injury or death:

- Disconnect electric power to the washer before servicing.
- Never start the washer with any guards/panels removed.
- Whenever ground wires are removed during servicing, these ground wires must be reconnected to ensure that the washer is properly grounded.

W003

- Remove inner basket/trunnion assembly from washer and evenly torque three nuts to  $200 \pm 10$  inch-pounds.
- Recheck that concentricity is still within .05 inch.

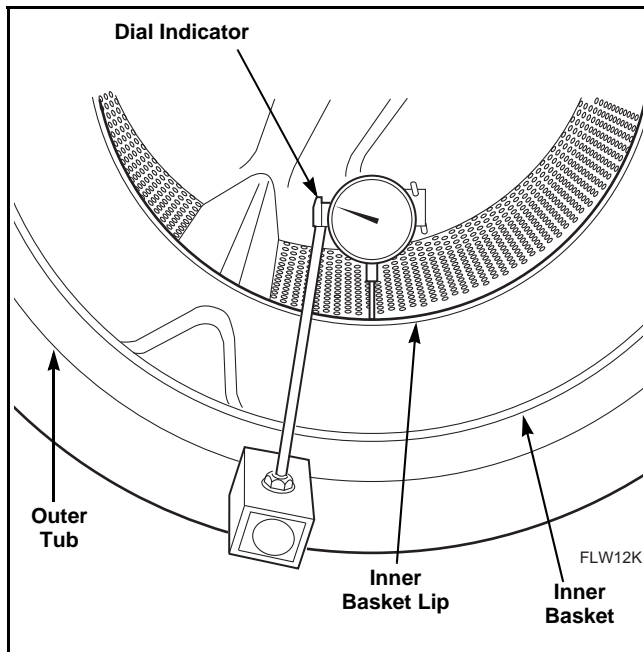


Figure 42

### Inner Basket Installation –

- Apply No. 27604P Anti-Seize Compound to the area of the trunnion shaft that will be contacting the front and rear bearings. Refer to Figure 43.
- Apply a film of grease to area of shaft that will be contacting the bearing housing seal. Refer to Figure 43. Make sure seal lips also are packed with grease. Refer to Figure 43.

**IMPORTANT:** When installing inner basket, the following steps must be taken to ensure that the seal is properly orientated:

- Install inner basket assembly by pushing all the way into outer tub.
- Install pulley, flat washer, lockwasher and left hand cap screw. Refer to Figure 30.

**IMPORTANT:** When installing pulley, always use a new cap screw (included in kit) to prevent screw from loosening during operation. Use a thread tap to clean old Loctite out of pulley screw receiving hole before installing new screw. This ensures that inner basket and pulley properly seat.

- Unscrew left hand thread screw half way.
- Install pulley bolt tightening fixture between the flat washer and the pulley. Refer to Figure 44.
- Tighten left hand thread screw until washer is against pulley bolt tightening fixture.
- Loosen screw about one half turn to free fixture.
- Remove pulley bolt tightening fixture.
- From front of washer, pull inner basket forward as far as possible. Flat washer should be against pulley.
- Push inner basket back into outer tub as far as possible.
- Tighten left hand thread screw. Be careful not to push the trunnion shaft forward while tightening the screw.

**NOTE:** Torque new left hand thread screw to 240 minimum to 260 maximum inch pounds (27.5 to 29.7 Nm).



## WARNING

To reduce the risk of electric shock, fire, explosion, serious injury or death:

- Disconnect electric power to the washer before servicing.
- Never start the washer with any guards/panels removed.
- Whenever ground wires are removed during servicing, these ground wires must be reconnected to ensure that the washer is properly grounded.

W003

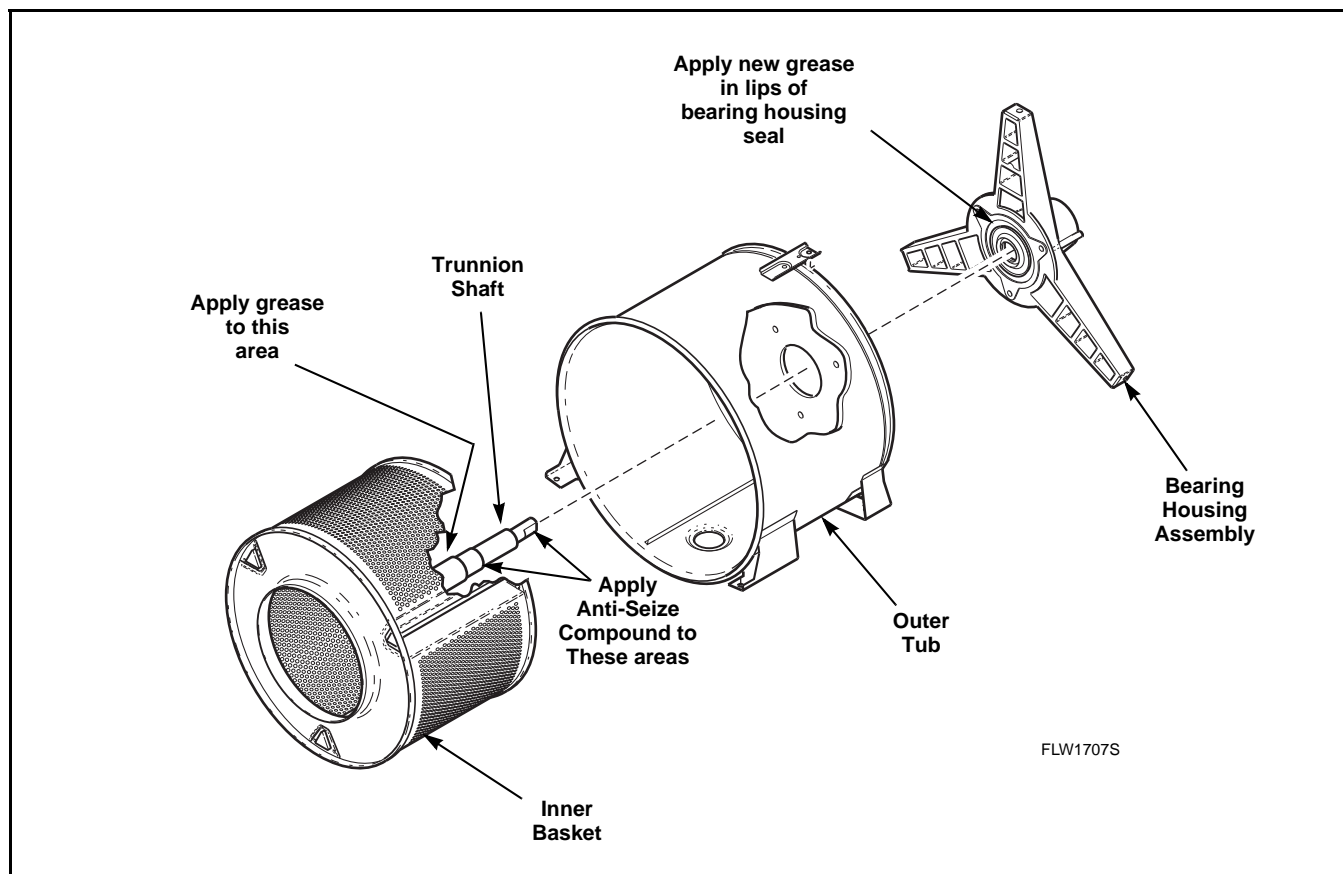


Figure 43



## WARNING

To reduce the risk of electric shock, fire, explosion, serious injury or death:

- Disconnect electric power to the washer before servicing.
- Never start the washer with any guards/panels removed.
- Whenever ground wires are removed during servicing, these ground wires must be reconnected to ensure that the washer is properly grounded.

W003

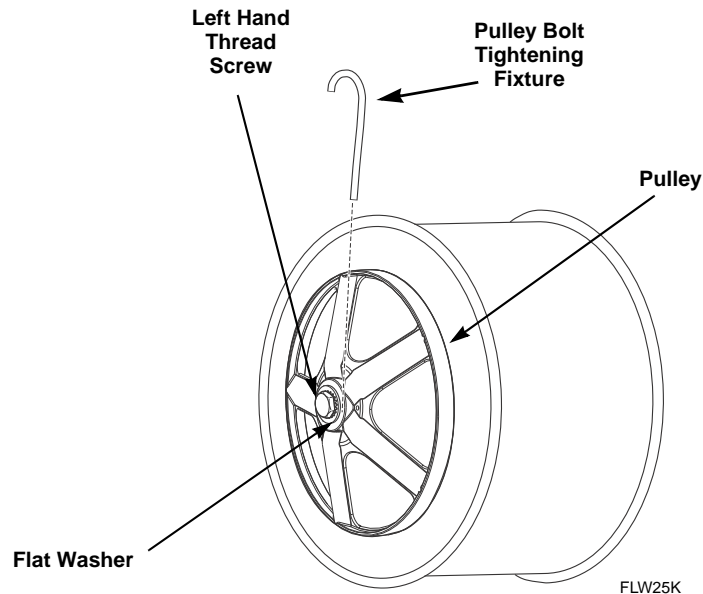


Figure 44

### 63. BEARING HOUSING

#### Bearing Housing Removal

- Unlock control panel. Refer to *Figure 17, Step 1*.
- Pull top of control panel away from control cabinet far enough to allow lifting control panel up and off rail support of the control cabinet. Refer to *Figure 17, Step 2*.
- Remove control panel away from control cabinet as far as wires permit. Refer to *Figure 17, Step 3*.
- Remove two screws holding front of cabinet top to top front edge of control cabinet front. Refer to *Figure 19*.
- Remove carriage bolts and nuts holding cabinet top and hinges to rear of control cabinet wrapper. Refer to *Figure 20*.
- Carefully lift cabinet top off washer and set alongside washer cabinet on protective padding.
- While supporting lower front access panel, remove two screws from bottom edge of panel. Refer to *Figure 26*.
- Gently lower front access panel to disengage panel locators from bottom edge of front panel.
- Run belt off pulley while slowly turning pulley.
- Remove belt from motor shaft.
- Remove cap screw (left hand thread), lockwasher and flat washer holding pulley to inner basket shaft. Refer to *Figure 39*.
- Remove pulley from shaft.

**IMPORTANT:** When installing pulley, always use a new cap screw to prevent screw from loosening during operation.





## WARNING

To reduce the risk of electric shock, fire, explosion, serious injury or death:

- Disconnect electric power to the washer before servicing.
- Never start the washer with any guards/panels removed.
- Whenever ground wires are removed during servicing, these ground wires must be reconnected to ensure that the washer is properly grounded.

W003

**NOTE:** When installing new cap screw, apply a thread locking compound to screw threads and torque new cap screw to 240 minimum to 260 maximum inch pounds (27.5 to 29.7 Nm).

- m. Remove dispenser drawer using special tool, Part No. 318P4. Refer to *Figure 30*.
- n. Working through the control panel opening, remove two screws holding bottom flange of control cabinet front to top flange of front panel, then remove bottom two corner screws. Refer to *Figure 25*.
- o. Open loading door. Carefully remove wire clamp ring from groove with small flat blade screwdriver. Spring is located in the 6 o'clock position.

**NOTE:** To avoid damage to spring, use screwdriver on wire clamp ring to the right or left of spring.

- p. Grasp loading door seal lip. Refer to *Figure 33*, Step 1.

**NOTE:** To avoid damage to door seal, DO NOT use pliers or sharp objects to grasp the door seal lip. If lip is damaged, seal will leak.

- q. Using a circular motion, pull seal up (*Figure 33*, Step 1), out (*Figure 33*, Step 2) and down (*Figure 33*, Step 3).
- r. When seal releases from lip of front panel, pull out and remove the seal. Refer to *Figure 33*, Step 4.
- s. Remove front panel (with loading door attached) away from washer as far as wires permit. Refer to *Figure 35*.
- t. Unplug door lock harness connectors and the wire harness clips along top flange of front panel. Refer to *Figure 35*. Disconnect wires from door switch and remove front panel with loading door attached.

**NOTE:** Refer to wiring diagram when rewiring door switch.

- u. Loosen clamp and remove door seal hose connection at dispenser. Refer to *Figure 35*.

**IMPORTANT:** When installing door seal hose, pull hose tie tight to prevent damage. Refer to *Figure 35*.

- v. Loosen large clamp and remove door seal off front of outer tub. Refer to *Figure 35*.

**NOTE:** Door seal installation can be improved using water or soap solution to work seal around circumference of loading door opening. Be sure to orientate seal with the tab in the 12 o'clock position.

- w. Disconnect ground wire from outer tub front panel. Refer to *Figure 38*.
- x. Remove nut, washers and screw holding clamp ring to outer tub front panel. Refer to *Figure 38*.
- y. Remove rubber seal from outer tub front panel and discard.

**IMPORTANT:** Always replace seal with a new seal. Spray or apply a mixture of diluted laundry detergent to assist in installation of new seal. The "puffy" side of seal should be installed to the inside for best results.

**NOTE:** Install clamp screw with threads and nut facing downward. Refer to *Figure 38*. Install metal clamp ring by placing clamp ring opening at approximately the 10 o'clock position to ensure no interference is encountered with side panel or the underside of the control cabinet. Tighten screw and nut until a spacing of one inch is achieved at the clamp ring opening. Tap clamp ring all around while tightening the screw and nut.

- z. Carefully remove inner basket out through front of washer.

**NOTE:** When installing inner basket, apply No. 27604P Anti-Seize Compound to the area of inner basket shaft that will be contacting the front and rear bearings.

- aa. Remove three screws holding bearing housing arms to outer tub.





## WARNING

To reduce the risk of electric shock, fire, explosion, serious injury or death:

- Disconnect electric power to the washer before servicing.
- Never start the washer with any guards/panels removed.
- Whenever ground wires are removed during servicing, these ground wires must be reconnected to ensure that the washer is properly grounded.

W003

**IMPORTANT:** Prior to disassembly, note the position of the pressure hose, hose clips and mounting plate so parts can be reinstalled in the same position. Refer to *Figure 39*.

- ab. While supporting bearing housing, remove three inner screws holding bearing housing to rear of outer tub. Refer to *Figure 39*.

### Bearing Housing Installation –

**NOTE:** When installing the bearing housing, be sure to route the pressure hose under the right arm and attach hose and pressure hose clip to mounting plate. Refer to *Figure 30*. Then route pressure hose up to the hose mounting plate on the top arm. Refer to *Figure 30*. Make sure there is no slack between these two points. All excess pressure hose slack must be collected between the top hose mounting plate on the bearing housing arm and the pressure hose clip.

**IMPORTANT:** The three arm bolts should always be tightened first and torqued to 275 inch pounds (31.46 Nm). Then tighten the three inner bolts and torque to 150 inch pounds (17.16 Nm).

**NOTE:** If a bearing failure should occur, a new bearing housing assembly should always be used. The bearings and seal are not serviceable parts. Make sure the new bearing housing seal has lubrication in all grooves before installation. If not, lubricate seal.

- a. Apply No. 27604P Anti-Seize Compound to the area of the trunnion shaft that will be contacting the front and rear bearings. Refer to *Figure 43*.
- b. Apply a film of grease to area of shaft that will be contacting the bearing housing seal. *Figure 43*. Make sure seal lips also are packed with grease. Refer to *Figure 43*.

**IMPORTANT:** When installing inner basket, the following steps must be taken to ensure that the seal is properly orientated:

- c. Install inner basket assembly by pushing all the way into outer tub.
- d. Install pulley, flat washer, lockwasher and left hand thread screw. Refer to *Figure 30*.

**IMPORTANT:** When installing pulley, always use a new cap screw (included in kit) to prevent screw from loosening during operation. Use a thread tap to clean old Loctite out of pulley screw receiving hole before installing new screw. This ensures that inner basket and pulley properly seat.

- e. Unscrew left hand thread screw half way.
- f. Install pulley bolt tightening fixture between the flat washer and the pulley. Refer to *Figure 44*.
- g. Tighten left hand thread screw until washer is against pulley bolt tightening fixture.
- h. Loosen screw about one half turn to free fixture.
- i. Remove pulley bolt tightening fixture.
- j. From front of washer, pull inner basket forward as far as possible. Flat washer should be against pulley.
- k. Push inner basket back into outer tub as far as possible.
- l. Tighten left hand thread screw. Be careful not to push the trunnion shaft forward while tightening the screw.

**NOTE:** Torque new left hand thread screw to 240 minimum to 260 maximum inch pounds (27.5 to 29.7 Nm).

# Section 6 Adjustments



## WARNING

To reduce the risk of electric shock, fire, explosion, serious injury or death:

- Disconnect electric power to the washer before servicing.
- Never start the washer with any guards/panels removed.
- Whenever ground wires are removed during servicing, these ground wires must be reconnected to ensure that the washer is properly grounded.

W003

**IMPORTANT:** When reference is made to directions (right or left) in this manual, it is from operator's position facing front of washer.

### 64. CABINET LEVELING LEGS

- Place washer in position on a clean, firm and reasonably level floor. Installing the washer on any type of carpeting is not recommended.
- Loosen locknuts and adjust the leveling legs until the washer does not rock. Refer to *Figure 45*.

**NOTE:** Level must rest on raised portion of top panel. Refer to *Figure 45*.

- Tighten the locknuts securely against the washer base. If the locknuts are not tight, washer will move out of position during operation.



## CAUTION

**DO NOT** slide washer across floor if the leveling legs have been extended, as legs and base could become damaged.

W248



## CAUTION

**Use of the dispenser drawer or washer door as a handle in the transportation of the washer may cause damage to the dispenser or door.**

W185

- Remove rubber feet from accessories bag and place on all four leveling legs. Refer to *Figure 45*.

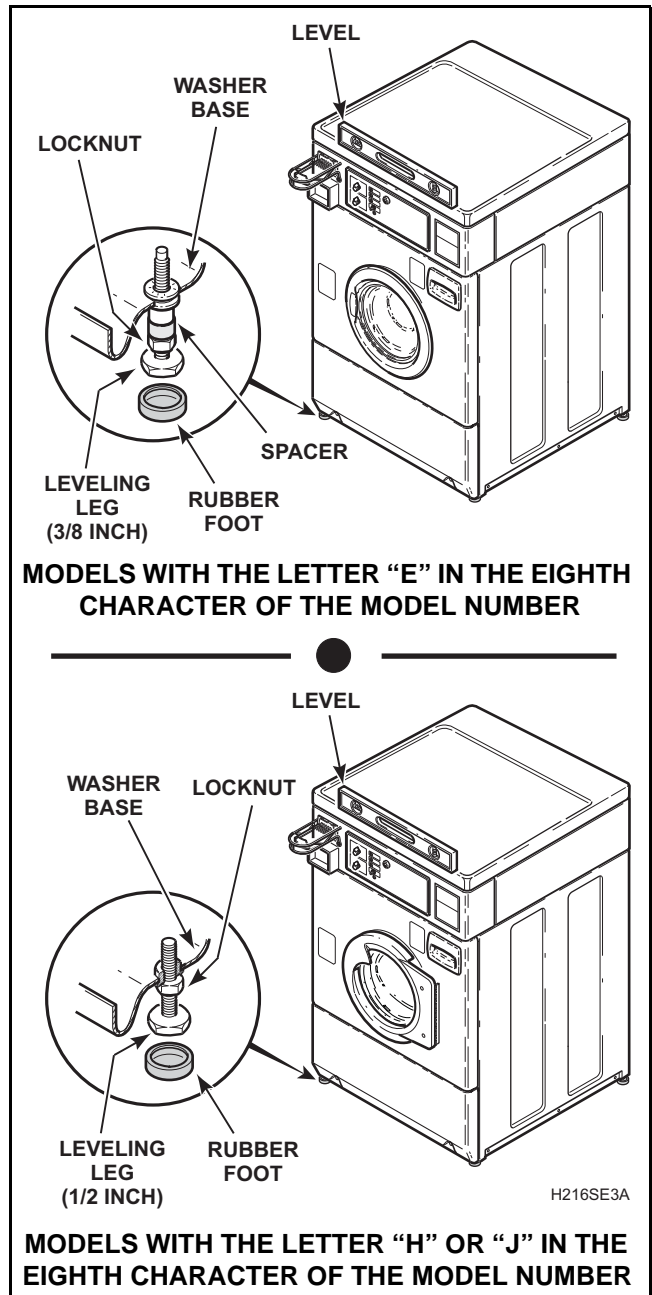


Figure 45



## WARNING

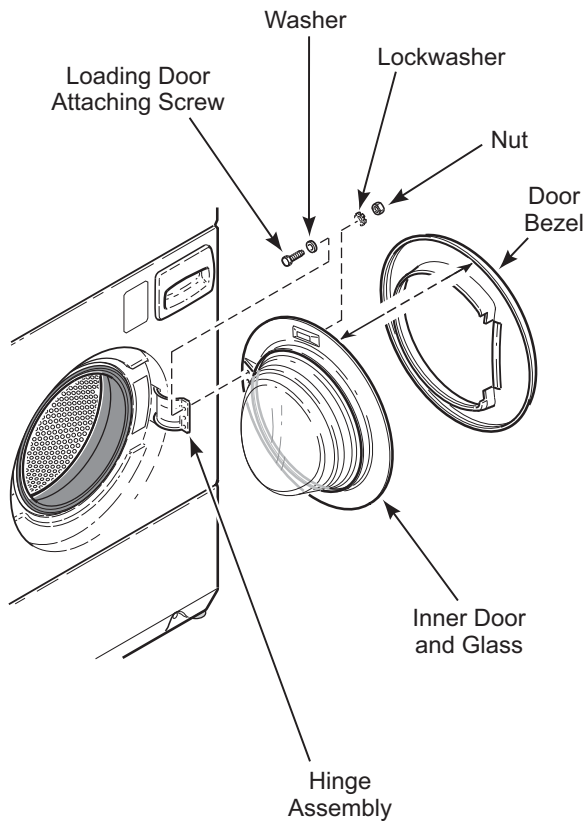
To reduce the risk of electric shock, fire, explosion, serious injury or death:

- Disconnect electric power to the washer before servicing.
- Never start the washer with any guards/panels removed.
- Whenever ground wires are removed during servicing, these ground wires must be reconnected to ensure that the washer is properly grounded.

W003

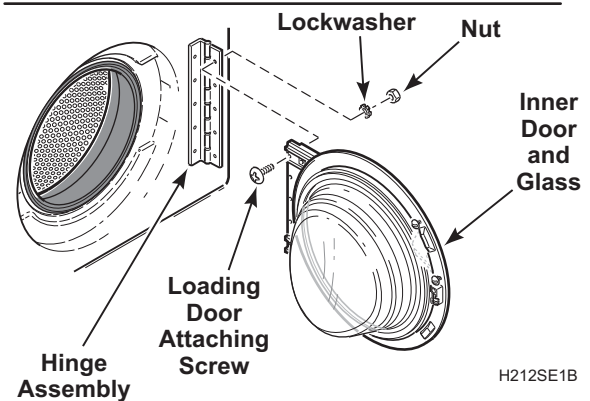
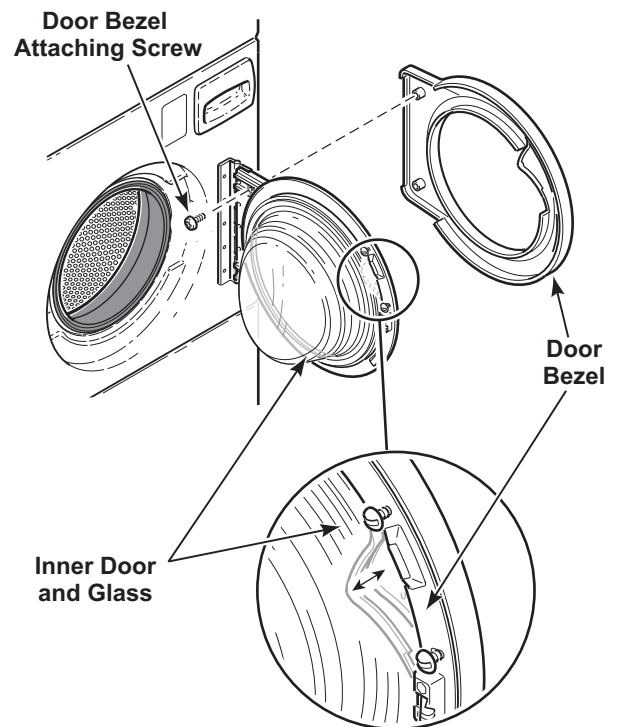
### 65. LOADING DOOR

- Open loading door.
- Remove door bezel to gain access to nuts. Refer to *Figure 46*.
- Remove screws, washers and nuts holding loading door to hinge assembly and remove door. Refer to *Figure 46*.



H211SE1B

**MODELS WITH THE LETTER “E” IN THE EIGHTH CHARACTER OF THE MODEL NUMBER**



H212SE1B

**MODELS WITH THE LETTER “H” OR “J” IN THE EIGHTH CHARACTER OF THE MODEL NUMBER**

Figure 46



## WARNING

To reduce the risk of electric shock, fire, explosion, serious injury or death:

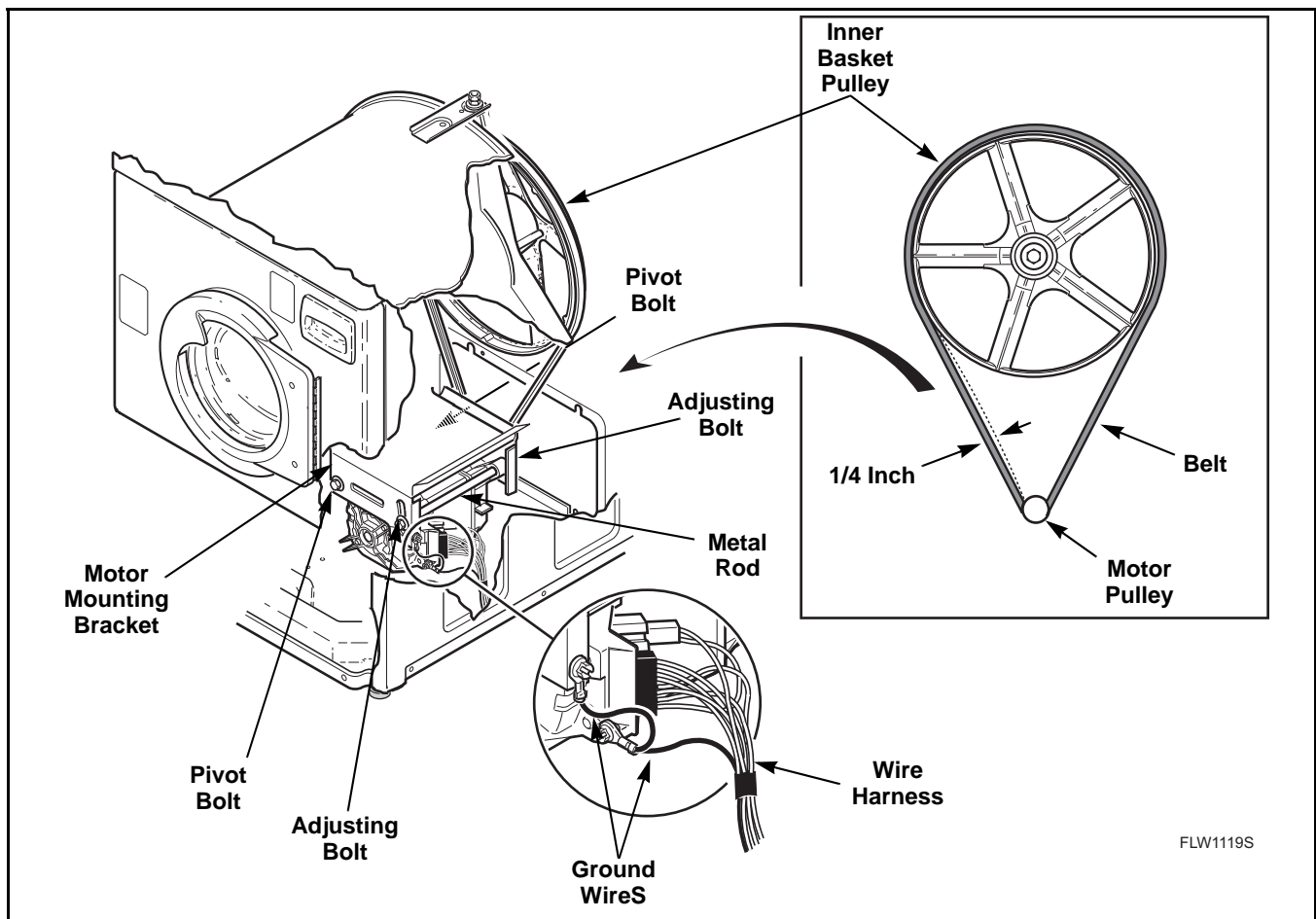
- Disconnect electric power to the washer before servicing.
- Never start the washer with any guards/panels removed.
- Whenever ground wires are removed during servicing, these ground wires must be reconnected to ensure that the washer is properly grounded.

W003

### 66. MOTOR BELT TENSION

**NOTE:** Belt adjustment procedures are done through front of washer, however, as an option, washer can be moved from its location and belt adjustment can be done through lower access panel opening at rear of washer.

- While supporting lower front access panel, remove two screws from bottom edge of access panel and remove panel. Refer to *Figure 26*.
- Working through the lower front access door opening, place a locking pliers on the metal rod and loosen the two adjusting bolts. Refer to *Figure 47*. Repeat procedure to loosen the two pivot bolts. Refer to *Figure 47*.
- Pull down on motor to increase belt tension. Use a Burroughs belt gauge to obtain proper tension. Proper belt tension is obtained when belt can be deflected approximately 1/4 inch (6.35 mm) from normal position when moderate pressure 50 to 60 pounds (22.68 to 27.22 Kg) is applied to a point midway between pulleys. Refer to *Figure 47*.
- After proper belt tension has been obtained, tighten belt adjusting bolts firmly, then tighten pivot bolts. Refer to *Figure 47*.



FLW1119S

Figure 47



## WARNING

To reduce the risk of electric shock, fire, explosion, serious injury or death:

- Disconnect electric power to the washer before servicing.
- Never start the washer with any guards/panels removed.
- Whenever ground wires are removed during servicing, these ground wires must be reconnected to ensure that the washer is properly grounded.

W003

### 67. DOOR CATCH

**NOTE:** When repairing a broken or inoperative No. 685430 Door Catch, proceed as follows:

- Remove door bezel.
- Remove two screws and nuts holding door catch to door and remove door catch.
- Install new door catch and tighten screws and nuts to the point of being snug.
- Adjust door catch so the outside edge is aligned with the edge of the latch. Refer to *Figure 48*.
- Visually check that the door catch properly engages the funnel of the door latch/switch assembly. Refer to *Figure 48*.
- Recheck the alignment in step “d”. Adjust if needed.
- Torque the two nuts to approximately 30 inch pounds (3.4 Nm).
- Reinstall door bezel.

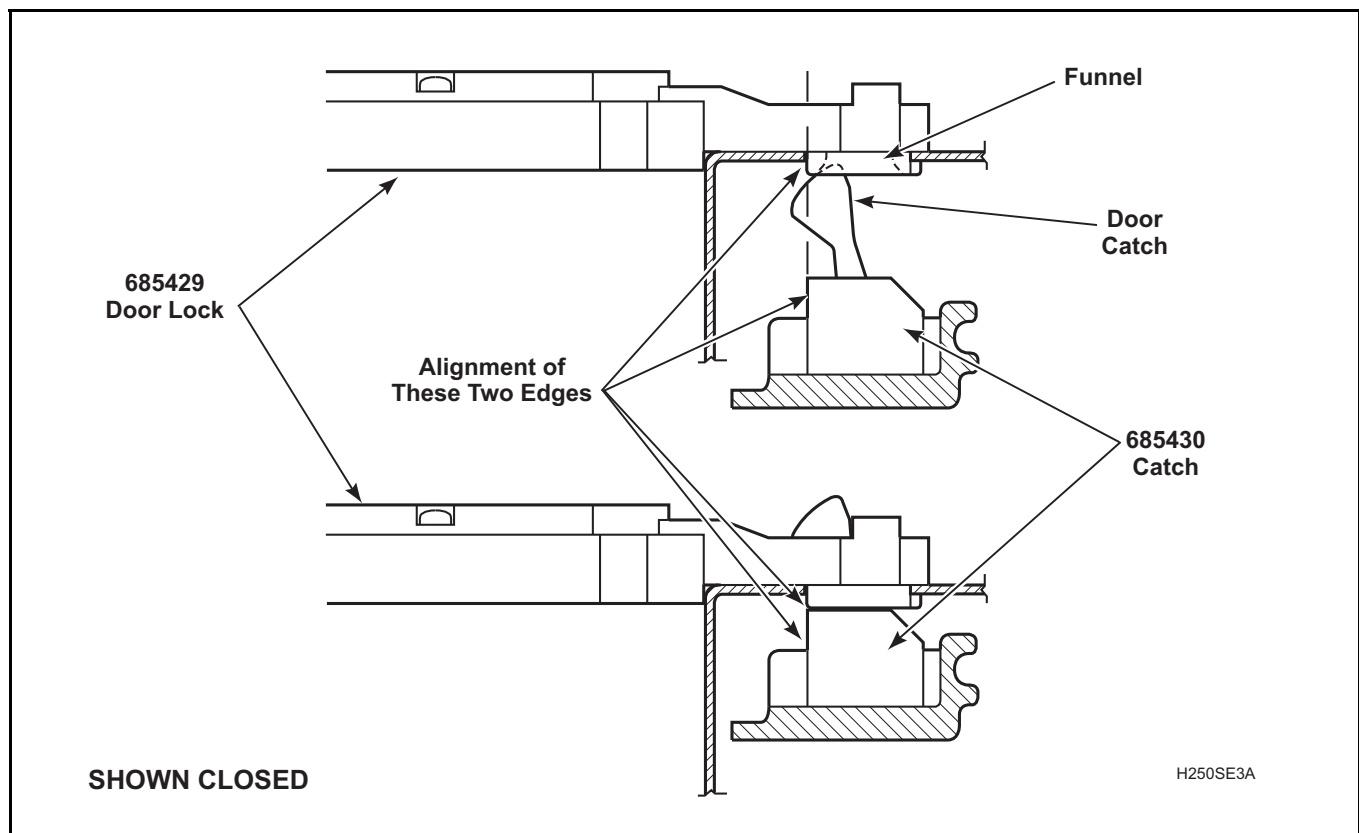


Figure 48



## WARNING

To reduce the risk of electric shock, fire, explosion, serious injury or death:

- Disconnect electric power to the washer before servicing.
- Never start the washer with any guards/panels removed.
- Whenever ground wires are removed during servicing, these ground wires must be reconnected to ensure that the washer is properly grounded.

W003

### 68. CLEANING NON-ELECTRONIC COIN DROP

- Disconnect electrical power to machine and drop.
- Remove coin drop from machine.
- If lint is preventing coins from rolling through coin drop, blow compressed air through coin entry and along the side of the coin drop. Refer to *Figure 49*.

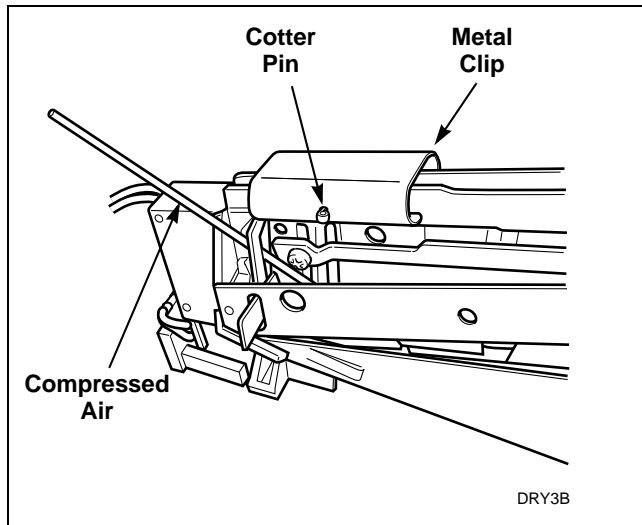


Figure 49

- Insert a coin through the coin drop. If coin does not roll through drop, continue with the following.
- Remove cotter pin from top of drop. Refer to *Figure 49*. Save pin for reinstallation when cleaning is complete.
- Move metal clip closer to sensor so that it comes off frame. Refer to *Figure 49*.

- Remove coin return from coin drop frame. Refer to *Figure 50*.

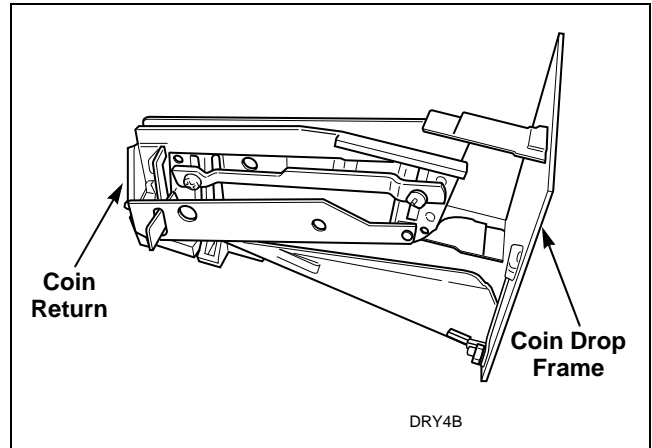


Figure 50

- Check coin path in coin drop for lint and residue. If lint or light residues are present, use a cotton swab to remove. If heavy residue is present, it may be necessary to first scrape off excessive residue and then use a cotton swab dipped in water or isopropyl alcohol (rubbing alcohol) to remove remainder of residue. Refer to *Figure 51*.

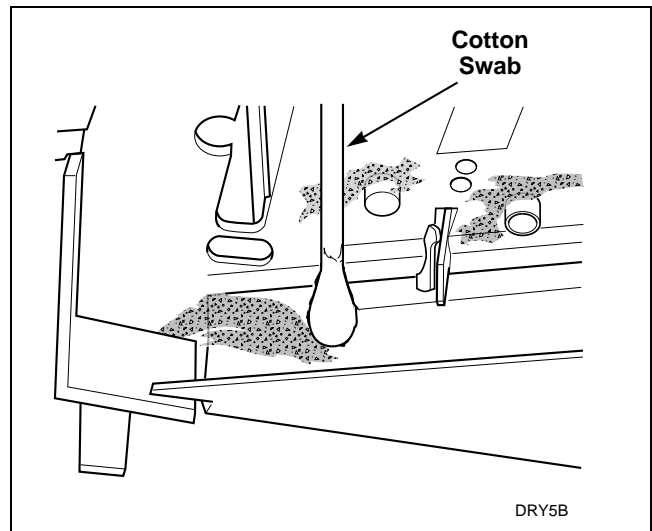


Figure 51



## WARNING

To reduce the risk of electric shock, fire, explosion, serious injury or death:

- Disconnect electric power to the washer before servicing.
- Never start the washer with any guards/panels removed.
- Whenever ground wires are removed during servicing, these ground wires must be reconnected to ensure that the washer is properly grounded.

W003

- i. Check coin return pendulum to verify it swings freely. If pendulum does not swing freely, spray pendulum pivot point with Teflon based lubricant and move pendulum back and forth two to three times. An additional application of Teflon based lubricant may be necessary to ensure that pendulum swings freely. Refer to *Figure 52*.

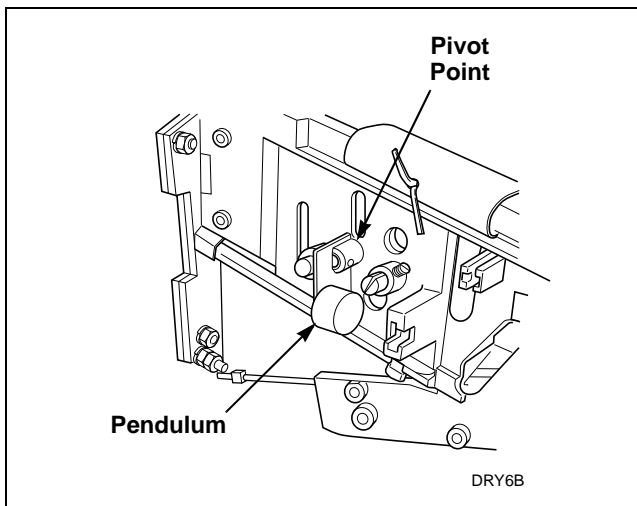


Figure 52

- j. Check coin drop sensor for dust or dirt on eyes. Wipe eyes with dry cotton swab. Refer to *Figure 53*.

**IMPORTANT: DO NOT use isopropyl alcohol to clean electronic sensor or eyes.**

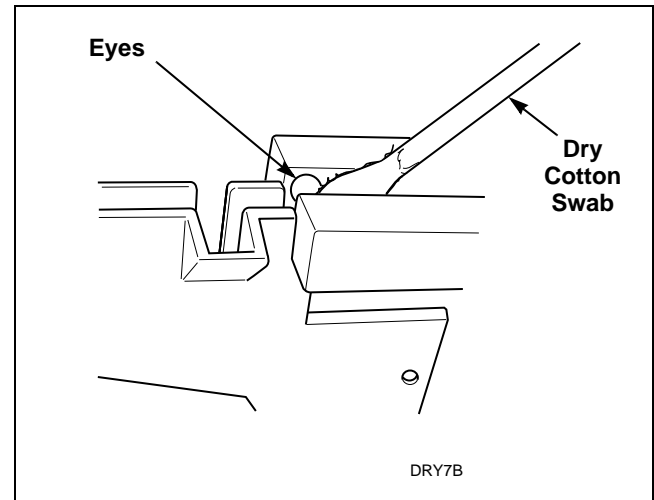


Figure 53

- k. Reinstall coin return on to coin drop frame.
- l. Reinstall metal clip and slide towards coin insert slot. All cotter pin holes must line up.
- m. Reinstall cotter pin.
- n. Place drop on level surface to verify that coins follow correct path in drop. It may be necessary to lift drop to allow coin to follow through sensor.
- o. Reinstall coin drop into machine.
- p. Reconnect electrical power to machine and drop.
- q. Add a coin to drop to verify that coin drop is operating properly and that electrical connection is working properly.

**NOTE: If coin drop does not operate properly after above steps have been completed, corrosion of metal or vandalized components within coin drop may be preventing the coin drop from functioning correctly. Replace coin drop.**



## WARNING

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W003

### 69. CLEANING ELECTRONIC COIN DROP

**NOTE:** The electronic coin drop should be cleaned once a year. Clean the drop more often if it is exposed to high levels of residue or lint build-up.

- Disconnect electrical power to machine and drop.
- Remove coin drop from machine.
- Move spring downward until cover catch is free. Refer to *Figure 54*.

**NOTE:** Do not lift or overbend the spring in any direction.

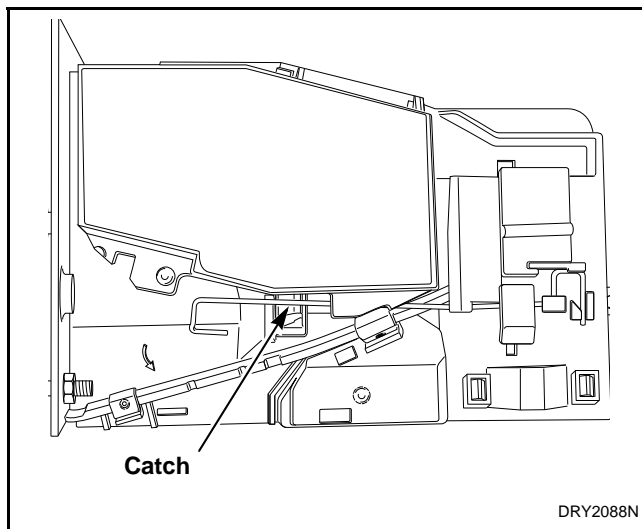


Figure 54

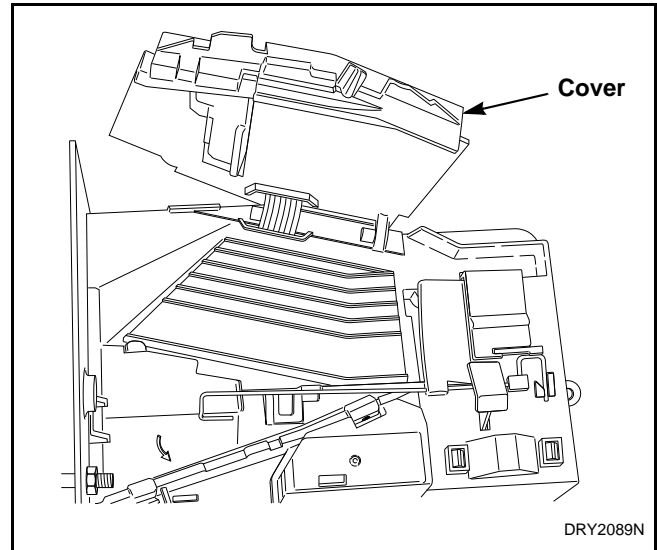


Figure 55

- Clean the coin path with a soft brush and wipe exposed surfaces with an alcohol moistened cloth. Refer to *Figure 56*.

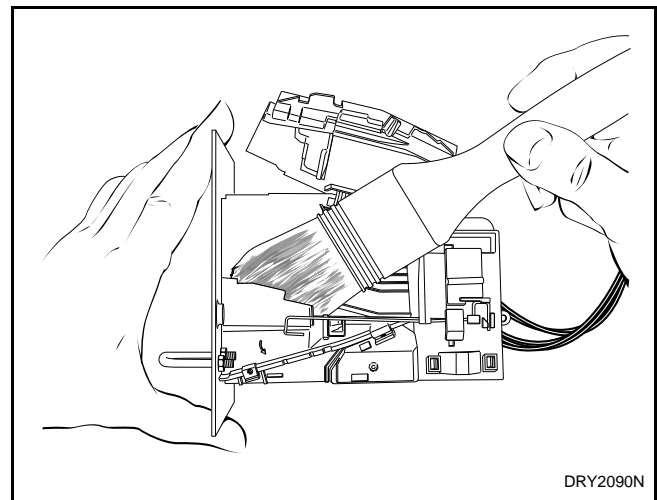


Figure 56

- Clean residue from coin rail with an alcohol moistened cloth. Refer to *Figure 57*.





## WARNING

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W003

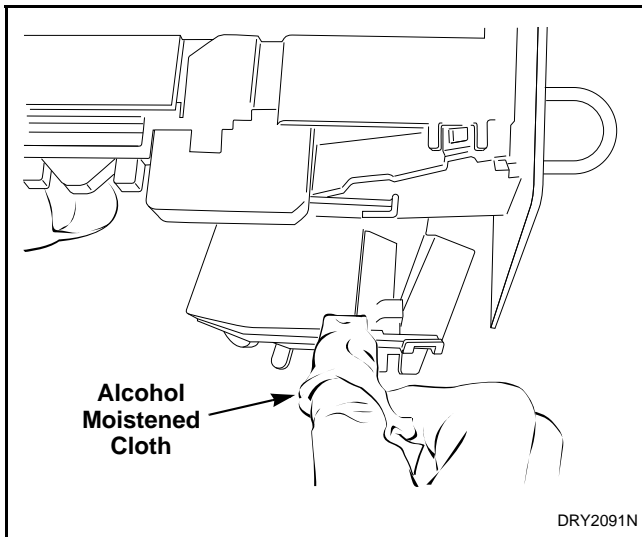


Figure 57

- k. Reconnect electrical power to machine and drop.
- l. Add a coin to drop to verify that coin drop is operating properly and that electrical connection is working properly.

- g. Clean light sensors with a soft brush or air spray duster. Refer to *Figure 58*.

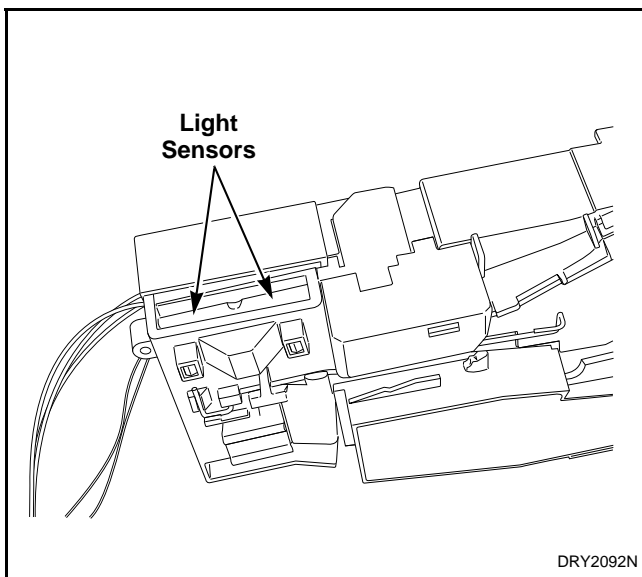


Figure 58

- h. Close cover for coin drop.
- i. Move spring back over cover catch.
- j. Reinstall coin drop into machine.





