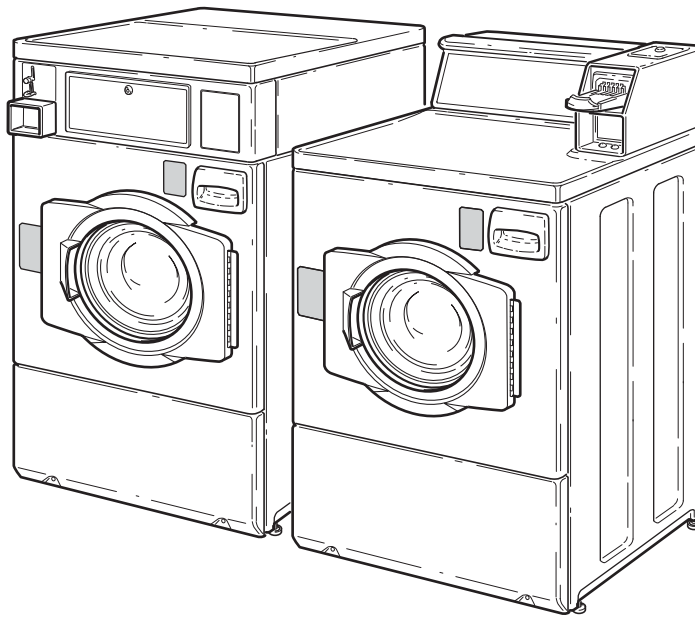


Commercial Frontload Washers

Refer to Page 6 for Model Numbers



FLW1520C

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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 an imminently hazardous situation that, if not avoided, will cause severe personal injury or death.

WARNING

Warning indicates a hazardous situation that, if not avoided, could cause severe personal injury or death.

CAUTION

Caution indicates a hazardous situation that, if not avoided, may cause minor or moderate personal injury or property damage.

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.





WARNING

- **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.**
- **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.**
- **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.**

W006R2

	WARNING
<p>To reduce the risk of electric shock, fire, explosion, serious injury or death:</p> <ul style="list-style-type: none">• 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.• Motor not grounded! Disconnect electric power before servicing motor.	
W485	

	WARNING
<p>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.</p>	
W007	

	WARNING
<p>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.</p>	
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

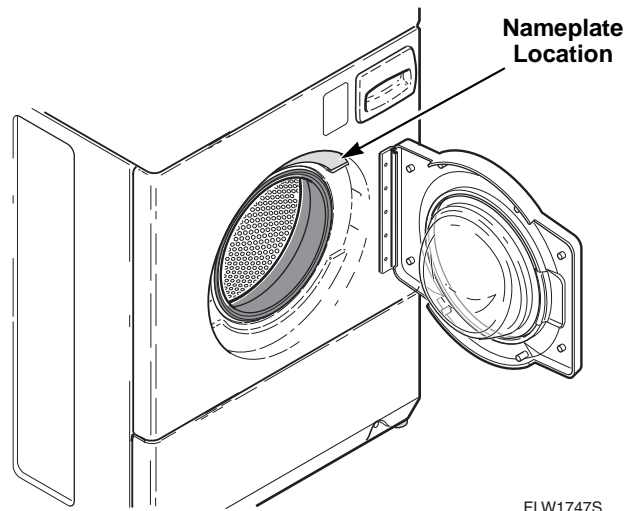
Customer Service

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.

Nameplate Location

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



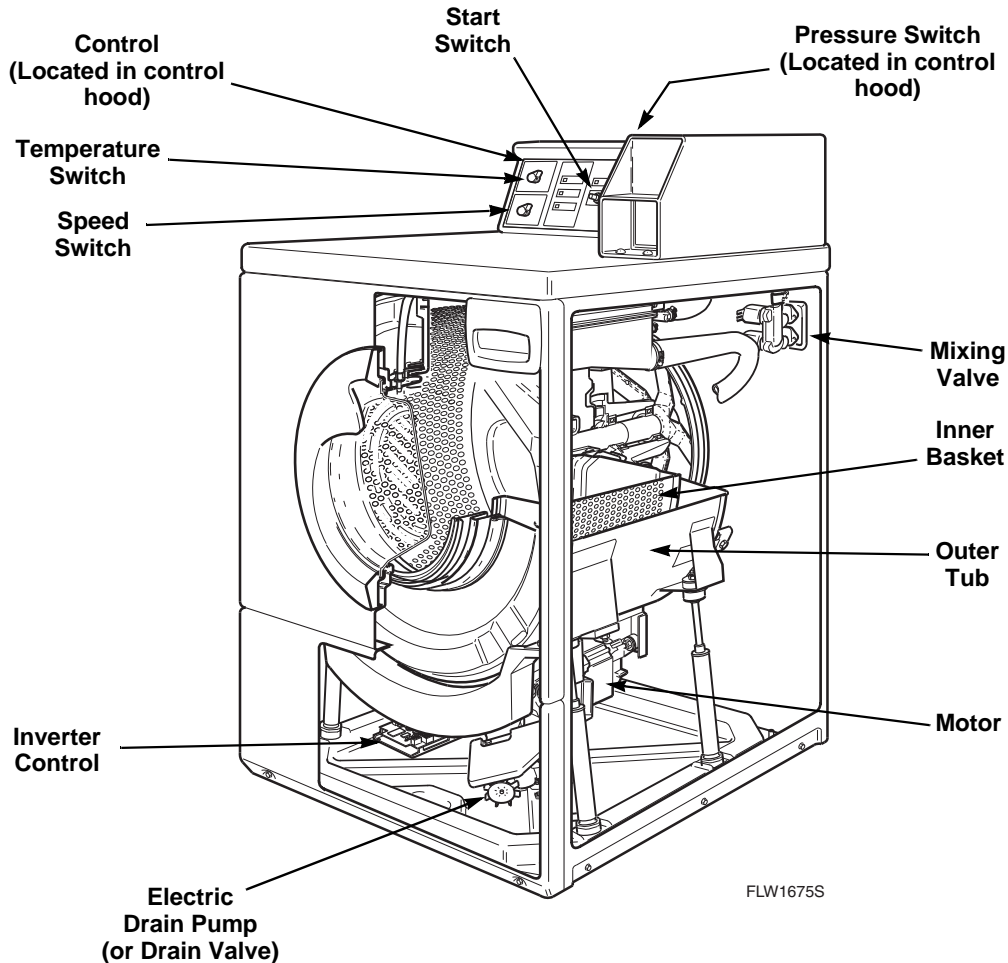
Model Identification

Information in this manual is applicable to these washers.

Model Number	Electromechanical	MDC	NetMaster
HWFB61*N			X
HWFT61*N		X	
HWFT63*N		X	
HWFZ61*N		X	
HWFZ63*N		X	
HWRT61*N		X	
HWR961*N	X		
HWR963*N	X		
SWFA61*N			X
SWFA63*N			X
SWFBE1*N			X
SWFB61*N			X
SWFB62*N			X
SWFB63*N			X
SWFF61*N			X
SWFF63*N			X
SWFJ61*N			X
SWFT61*N		X	
SWFT63*N		X	
SWFX61*N		X	
SWFX63*N		X	
SWFY61*N		X	
SWFY63*N		X	
SWFZ61*N		X	
SWFZ63*N		X	
SWRBE1*N			X
SWRB61*N			X
SWRF61*N			X
SWRTE1*N		X	
SWRT61*N		X	
SWRX61*N		X	
SWRY61*N		X	
SWR961*N	X		
SWR963*N	X		

* Add Letter To Designate Color. W – White Q – Bisque

How Your Washer Works (Electromechanical Models)



General

This frontload washer provides some of the same principles of operation as the typical topload washers. It senses water level, it 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 pressing the start button, which locks the loading door after the vend is satisfied. The type of cycle and water temperature are determined by

the temperature selector switch and the cycle select switch.

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 regular and perm press agitate cycle tumble the clothing in a clockwise direction for a period of 15 seconds, pauses for nine seconds and then tumbles the clothing in a counterclockwise direction for 15 seconds. This agitation continues until the wash soak cycle. The machine stops agitating and turns on the pump or drain valve which removes the wash water.

Upon completion of the wash cycle, the machine goes into two rinse cycles. Fresh cold water is brought into the inner basket via the mixing valve until the pressure

Section 2 Introduction

switch shuts off the water while agitating. The rinse cycle consists of agitation for a predetermined amount of time, then a spin mode with the pump running while the machine goes into a series of 4 short 500 RPM spins.

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
650 RPM	3 minutes	4 minutes	4 minutes
1000 RPM	3 minutes	2 minute	0 minutes

Technical

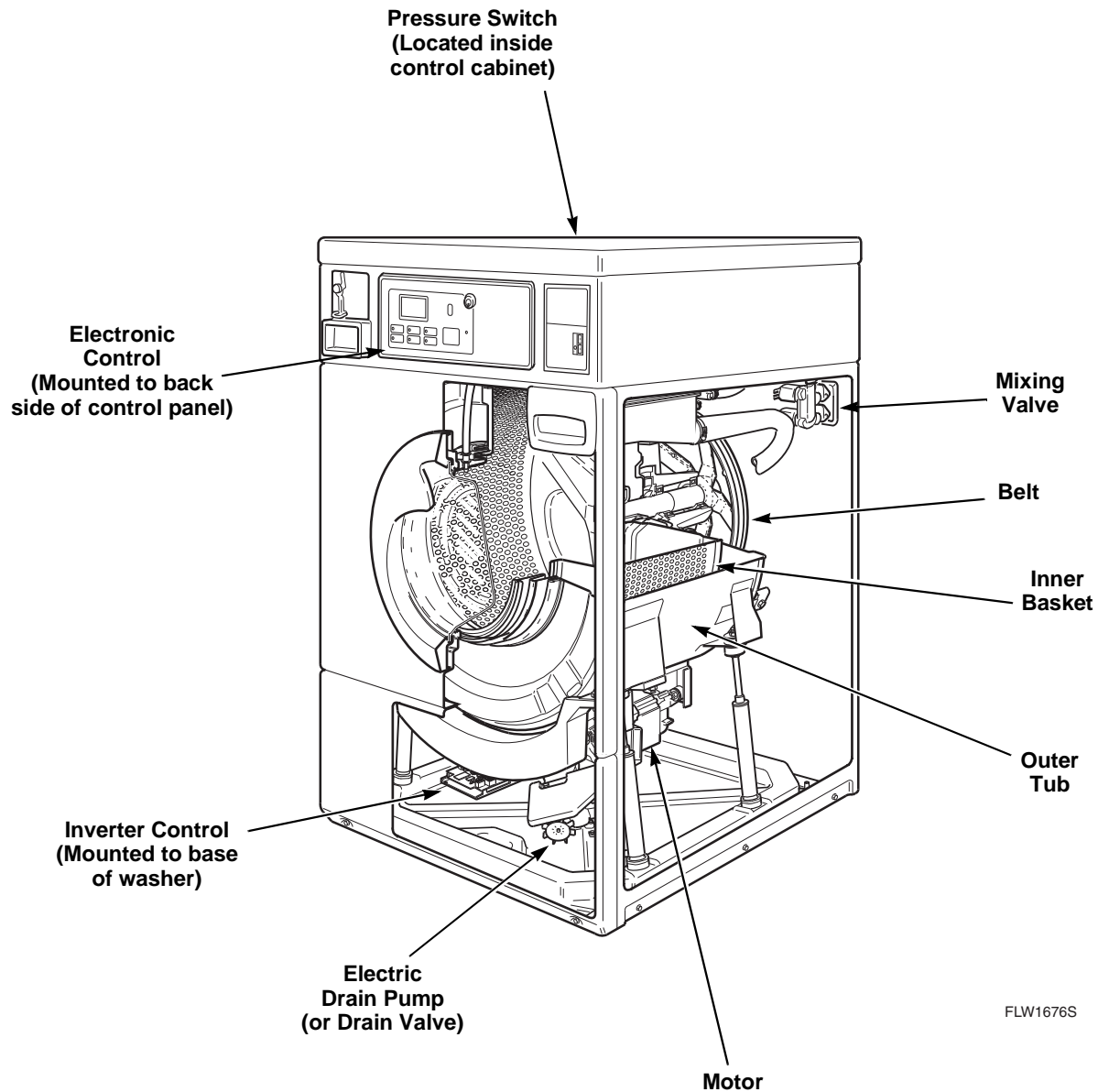
The basic operational system of this washer consists of the control, temperature switch, inverter control, pressure switch, water valves, electric pump (or drain valve), A.C. motor, transformer and cycle select switch.

The control performs all timing functions like the timer in a topload washer.

The inverter control uses a speed sensor on the motor to measure the drum RPM. Before entering any spin step, the inverter control measures the RPM of motor to sense out-of-balance. The inverter control will try to redistribute the clothes if an out-of-balance condition exists; the inverter 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 inverter 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 inverter control immediately stops and then restarts the spin.

How Your Washer Works (Electronic Control Models)



FLW1676S

General

This frontload washer provides some of the same principles of operation as the typical topload washers. It senses water level, it dispenses the desired laundry detergent, agitates the clothes for good cleaning action, removes 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

Section 2 Introduction

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 15 seconds, pauses for nine seconds and then tumbles the clothing in a counterclockwise direction for 15 seconds. This agitation continues until the wash soak cycle. The machine stops agitating and turns on the pump or drain valve 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 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 with a third extra rinse cycle being 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
650 RPM	3 minutes	4 minutes	4 minutes
1000 RPM	3 minutes	2 minute	0 minutes

Technical

The basic operational system of this washer consists of the electronic control, the inverter control, pressure switch, water valves, electric pump (or drain valve) and A.C. motor.

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

The inverter control powers the A.C. motor and performs all motor control functions. The inverter control also powers the water and dispenser valves and passes the pressure switch status to the electronic control. The inverter control is powered through the door switch, door lock switch and electronic control. The inverter control also alerts the electronic control to any errors in the motor.

The inverter control uses a speed sensor on the motor to measure the drum RPM. Before entering any spin step the inverter control measures the RPM of the drum to sense out-of-balance. The inverter control will try to redistribute the clothes if an out-of-balance condition exists; the inverter 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 inverter 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 inverter control immediately stops and then restarts the spin.

Section 3

Troubleshooting



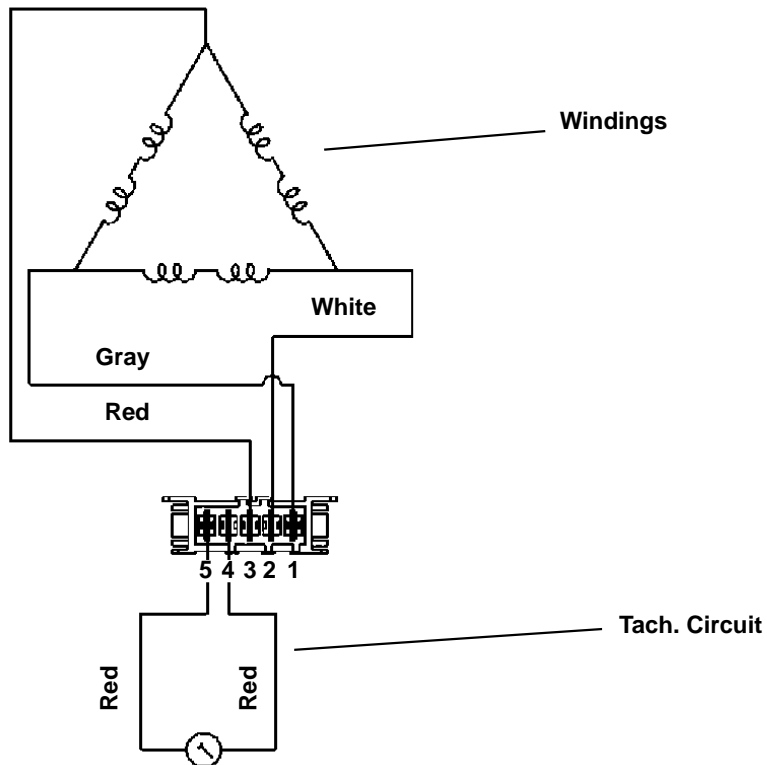
WARNING

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.
- Motor not grounded! Disconnect electric power before servicing motor.

W485

1. MOTOR CIRCUIT



Resistance Values:

Tachometer Circuit:
Terminals 4–5
Approx. 115 ohms

Windings:

Terminals 1–2, 2–3, 1–3
Approx. 4.5 ohms

2. 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 belt. Refer to *Paragraph 41*.



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.
- Motor not grounded! Disconnect electric power before servicing motor.

W485

3. 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.

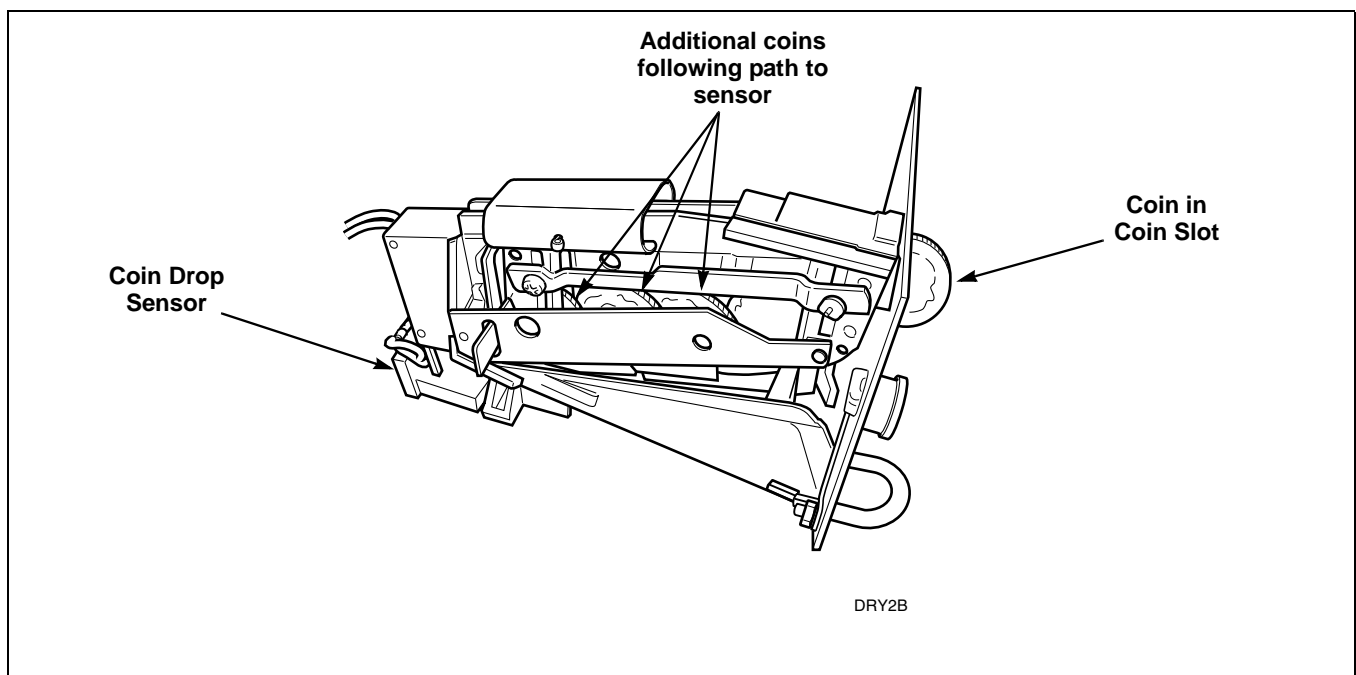
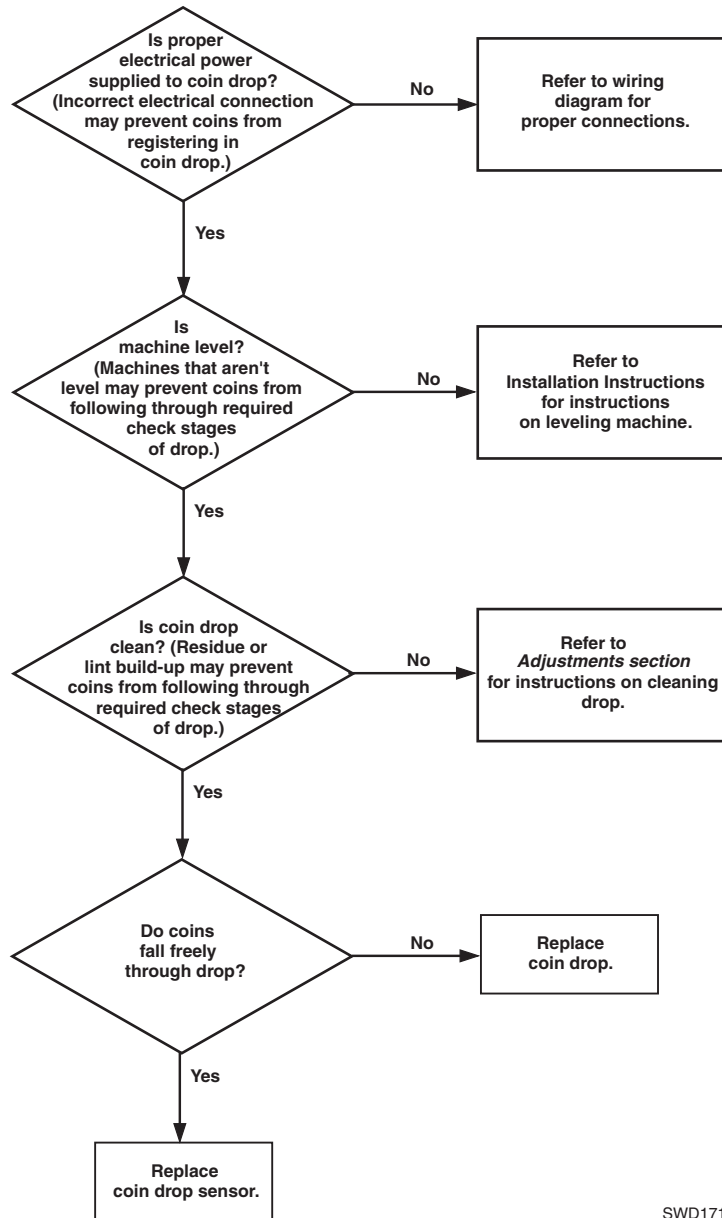


Figure 1



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.
- Motor not grounded! Disconnect electric power before servicing motor.

W485

b. Electronic Coin Drops:

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

- (1) Clean coin drop. Refer to *Paragraph 59*.
- (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*.

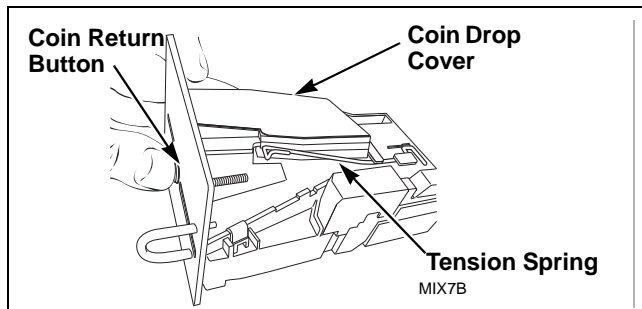


Figure 2

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

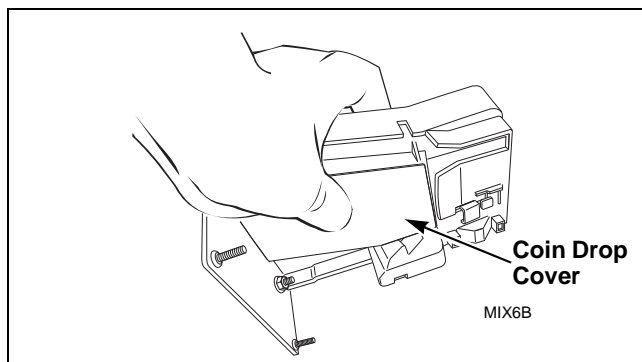


Figure 3

- (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*.

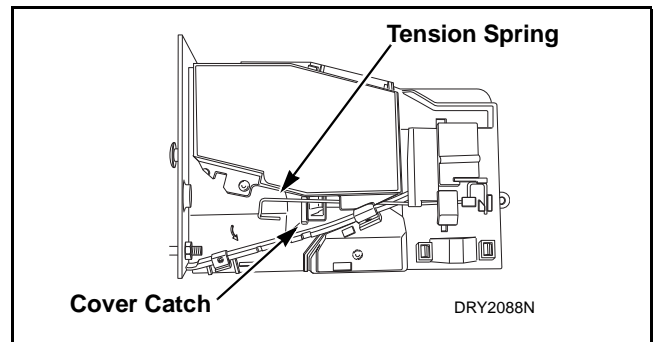


Figure 4

- (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*.

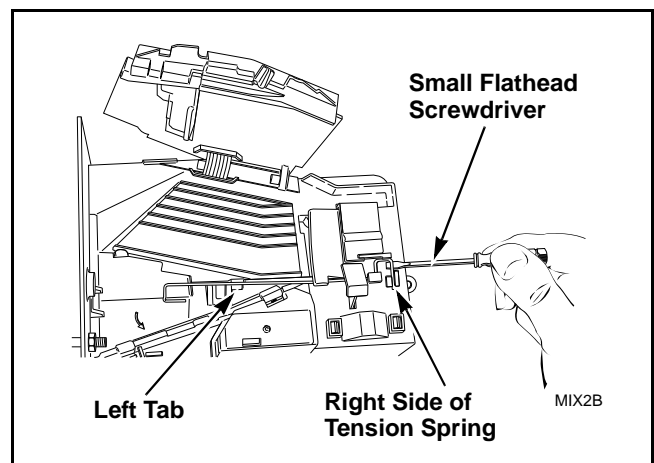


Figure 5

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



WARNING

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.
- Motor not grounded! Disconnect electric power before servicing motor.

W485

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

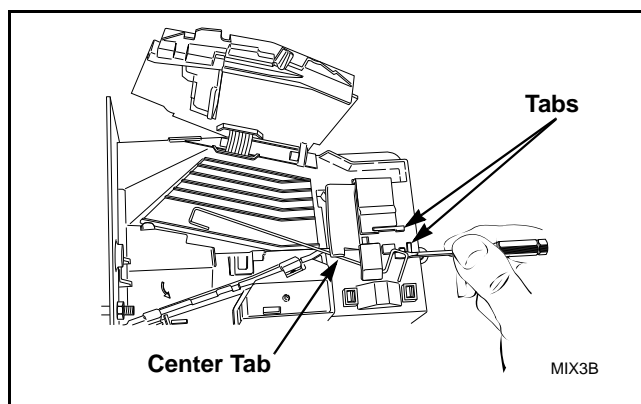


Figure 6

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

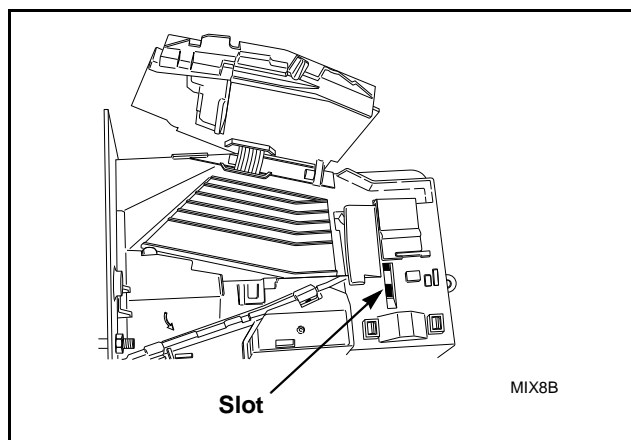


Figure 8

- (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*.

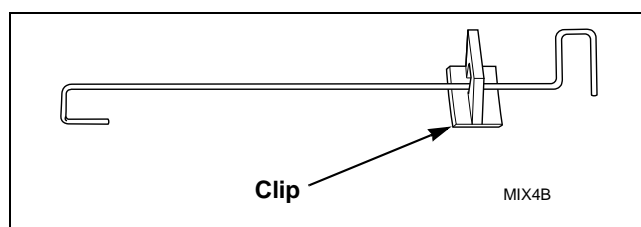


Figure 7

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

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

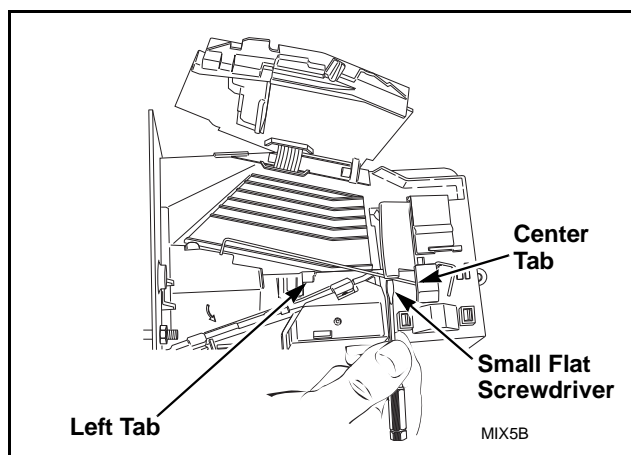


Figure 9

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



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.**
- **Motor not grounded! Disconnect electric power before servicing motor.**

W485

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.

Troubleshooting

Electromechanical 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.
- Motor not grounded! Disconnect electric power before servicing motor.

W485

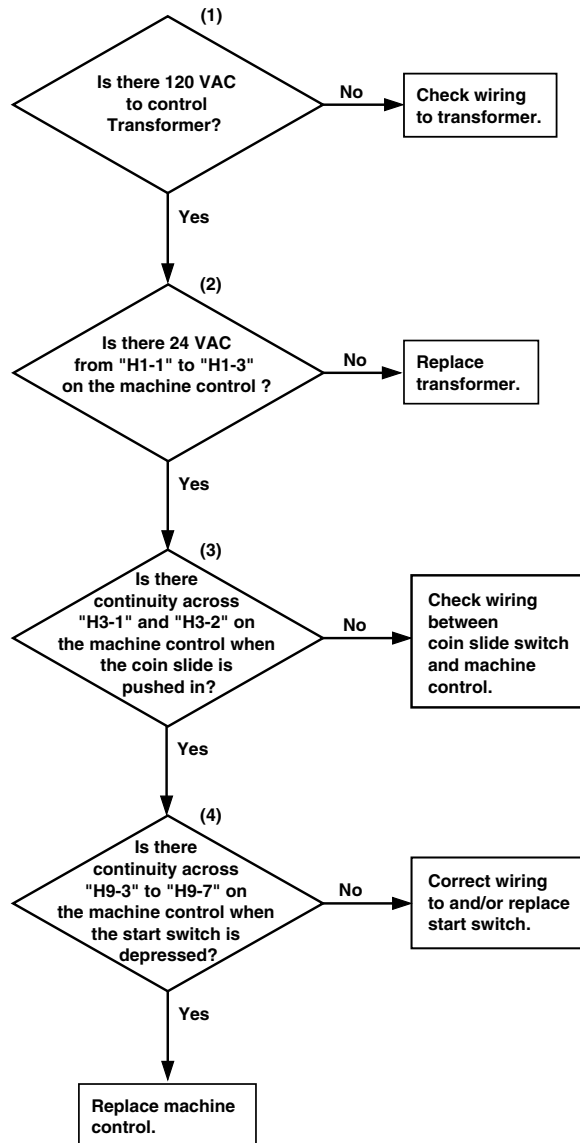
4. ERROR CODE LISTING

a. Error Conditions

If any of the following errors occur, the control enters Error Mode. For all fatal errors, the control will terminate the current cycle, turn off all outputs, and flash two LEDs one second on/one second off to indicate the error.

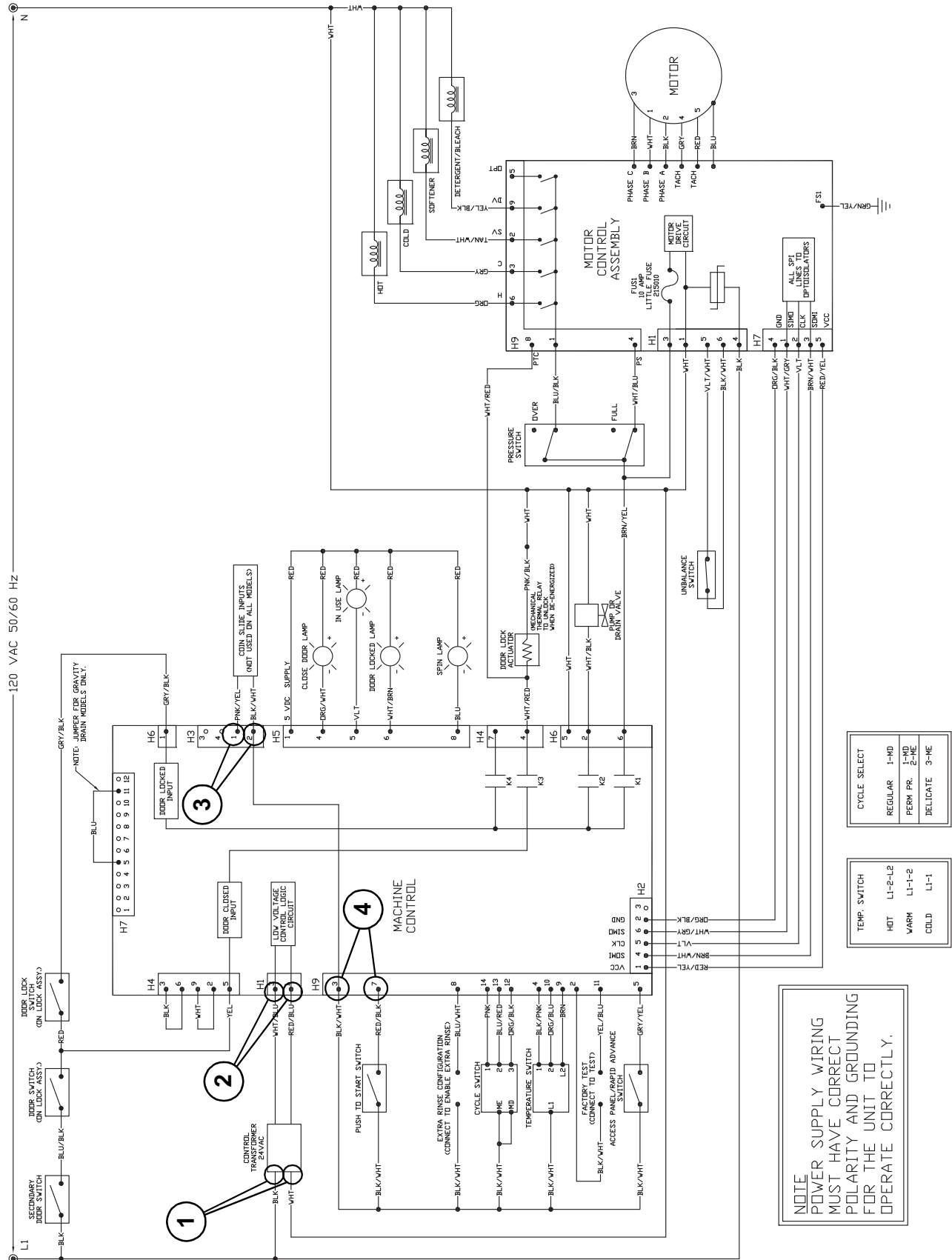
DOOR LOCKED and FINAL SPIN AND TUMBLE LEDs flashing (Motor Failure Error)	If the control receives the motor failure signal from the motor control, the control will enter Error Mode. The control will turn off all outputs and flash the DOOR LOCKED and FINAL SPIN AND TUMBLE LEDs one second on/one second off to indicate a motor failure error. This is a fatal error. The machine must be unpowered to clear this error.
IN USE and DOOR LOCKED LEDs flashing (Fill Error)	If the control receives no full input from the pressure switch indicating the cylinder is full within 30 minutes of starting the fill, the control will enter Error Mode. The control will turn off all outputs and flash the IN USE and DOOR LOCKED LEDs one second on/one second off to indicate a fill error. This is a fatal error. The machine must be unpowered to clear this error.
IN USE and CLOSE DOOR LEDs flashing (Door Open Error)	If the control senses the door open during Run Mode, the control will enter Error Mode. The control will turn off all outputs and flash the IN USE and CLOSE DOOR LEDs one second on/one second off to indicate a door open error. This is a fatal error. The machine must be unpowered to clear this error.
DOOR LOCKED and CLOSE DOOR LEDs flashing (Door Lock/Unlock Error)	<p>If the door doesn't lock in 15 seconds in Door Locking Mode or the door doesn't unlock in 3 minutes in Door Unlocking Mode, the control will enter Door Lock Error Mode. The control will turn off all outputs and flash the DOOR LOCKED and CLOSE DOOR LEDs one second on/one second off to indicate a door lock/unlock error.</p> <p>To clear this error in Door Locked Mode the door must either open or lock. If the door locks, the cycle will start normally. If the door opens, the control will revert back to Start Mode.</p> <p>To clear this error in Door Unlocking Mode the door must unlock or open. If the door unlocks or opens, the control will enter End of Cycle Mode.</p>
FINAL SPIN AND TUMBLE and CLOSE DOOR LEDs flashing (SPI Communications Error)	This error occurs when there is a problem with communications between the front-end control and the motor control. The control will turn off all outputs and flash the FINAL SPIN AND TUMBLE and CLOSE DOOR LEDs one second on/one second off to indicate an SPI communications error. This is a fatal error. The machine must be powered down at this point.

5. WASHER WILL NOT START – NO LEDS/LIGHTS LIT
(No Response to Start Switch)

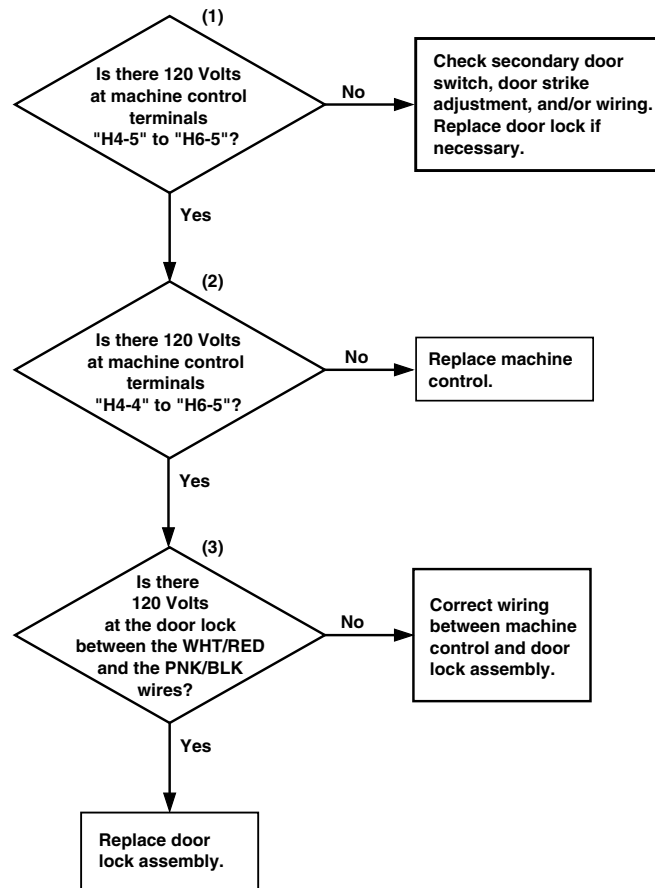


FLW1725S

WASHER WILL NOT START – NO LEDS/LIGHTS LIT (No Response to Start Switch)

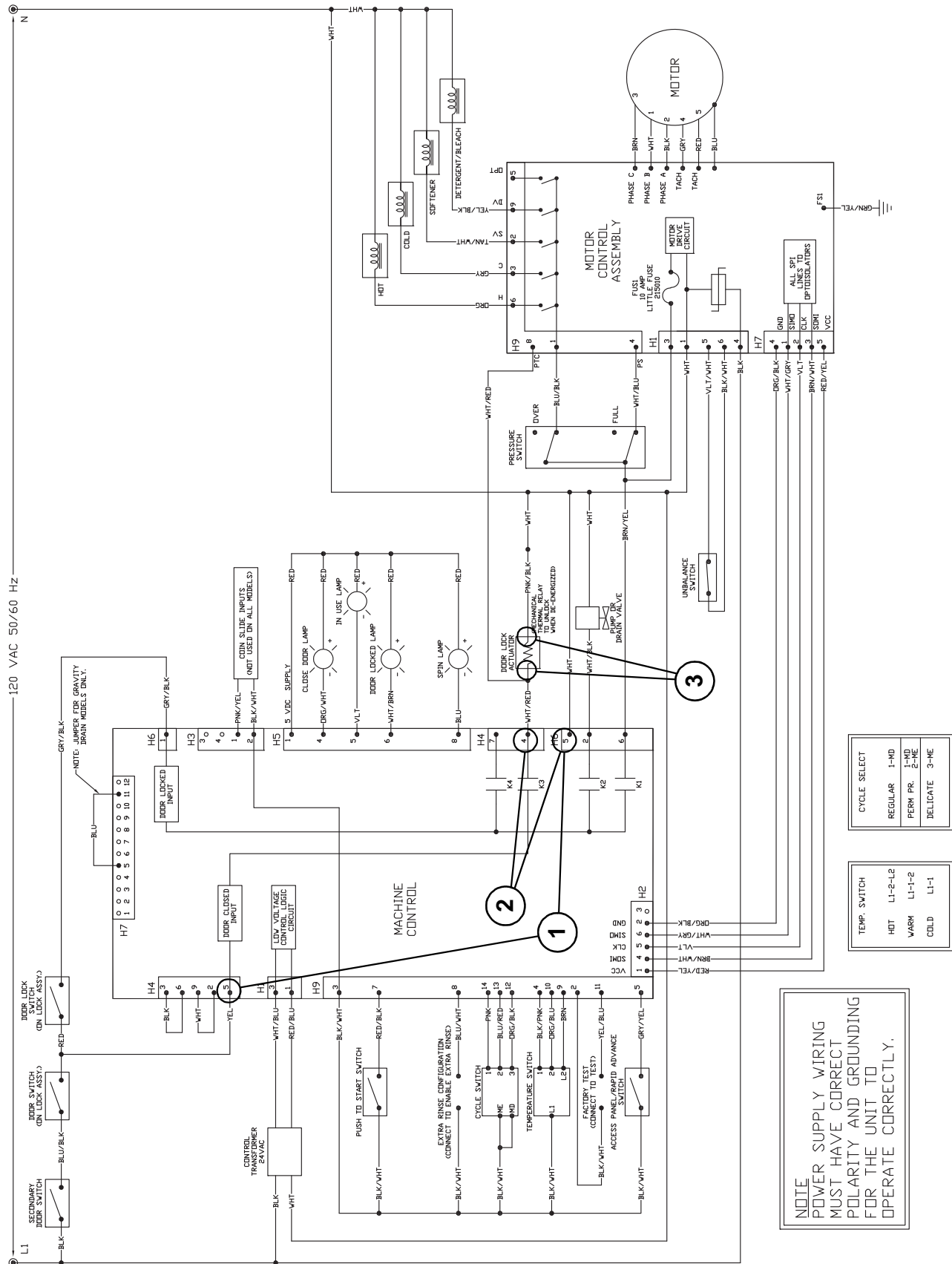


6. WASHER WILL NOT START – NO DOOR LOCK
(Door Locked/Close Door LEDs Flashing)

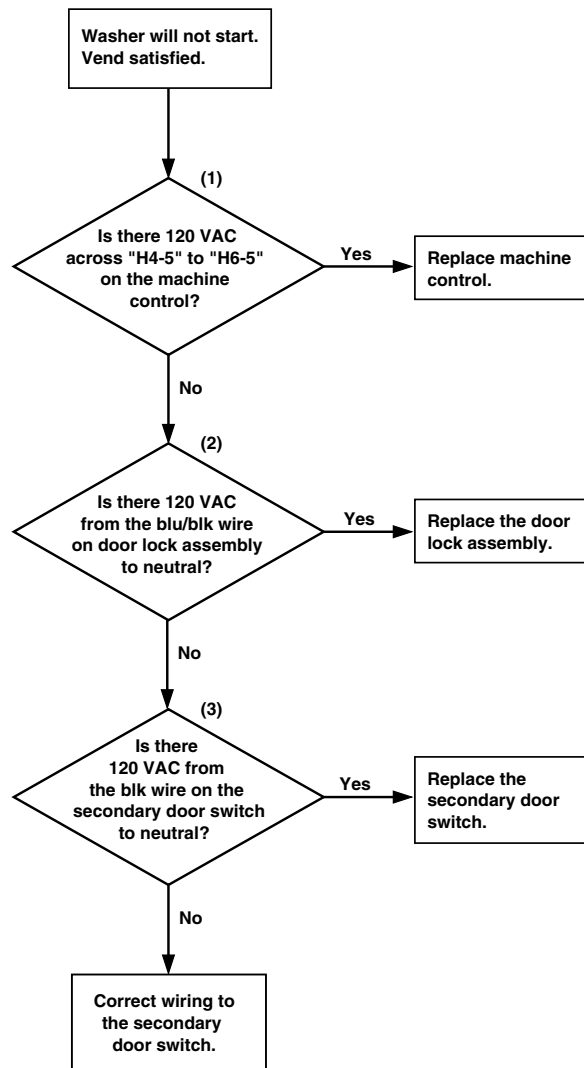


FLW1710S

WASHER WILL NOT START – NO DOOR LOCK (Door Locked/Close Door LEDs Flashing)

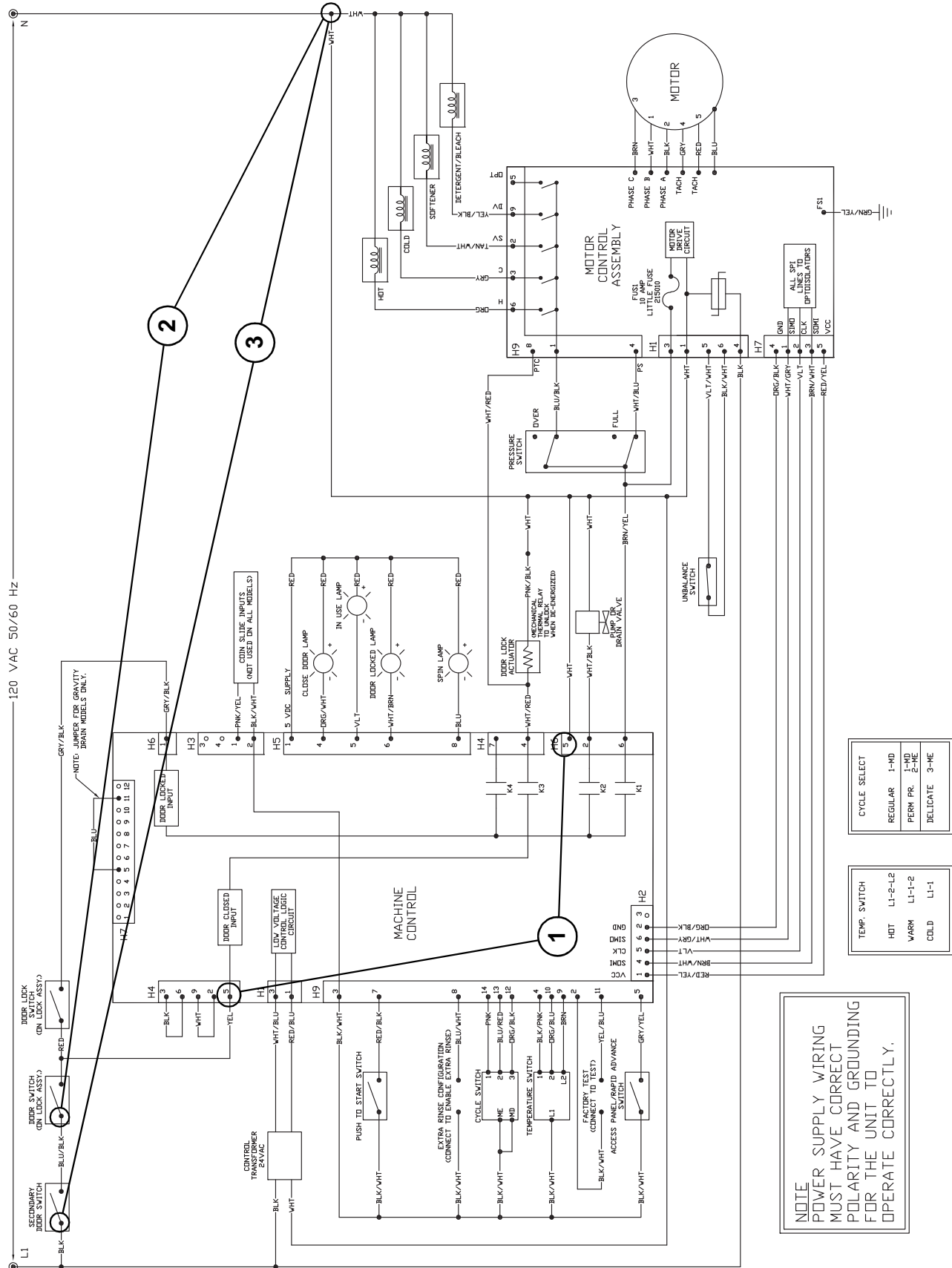


7. WASHER WILL NOT START – IN USE/CLOSE DOOR LEDS FLASHING
(Door must be closed and attempting to lock)

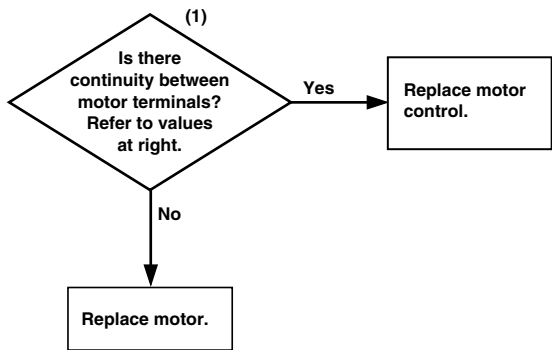


FLW1711S

WASHER WILL NOT START – IN USE/CLOSE DOOR LEDS FLASHING (Door must be closed and attempting to lock)



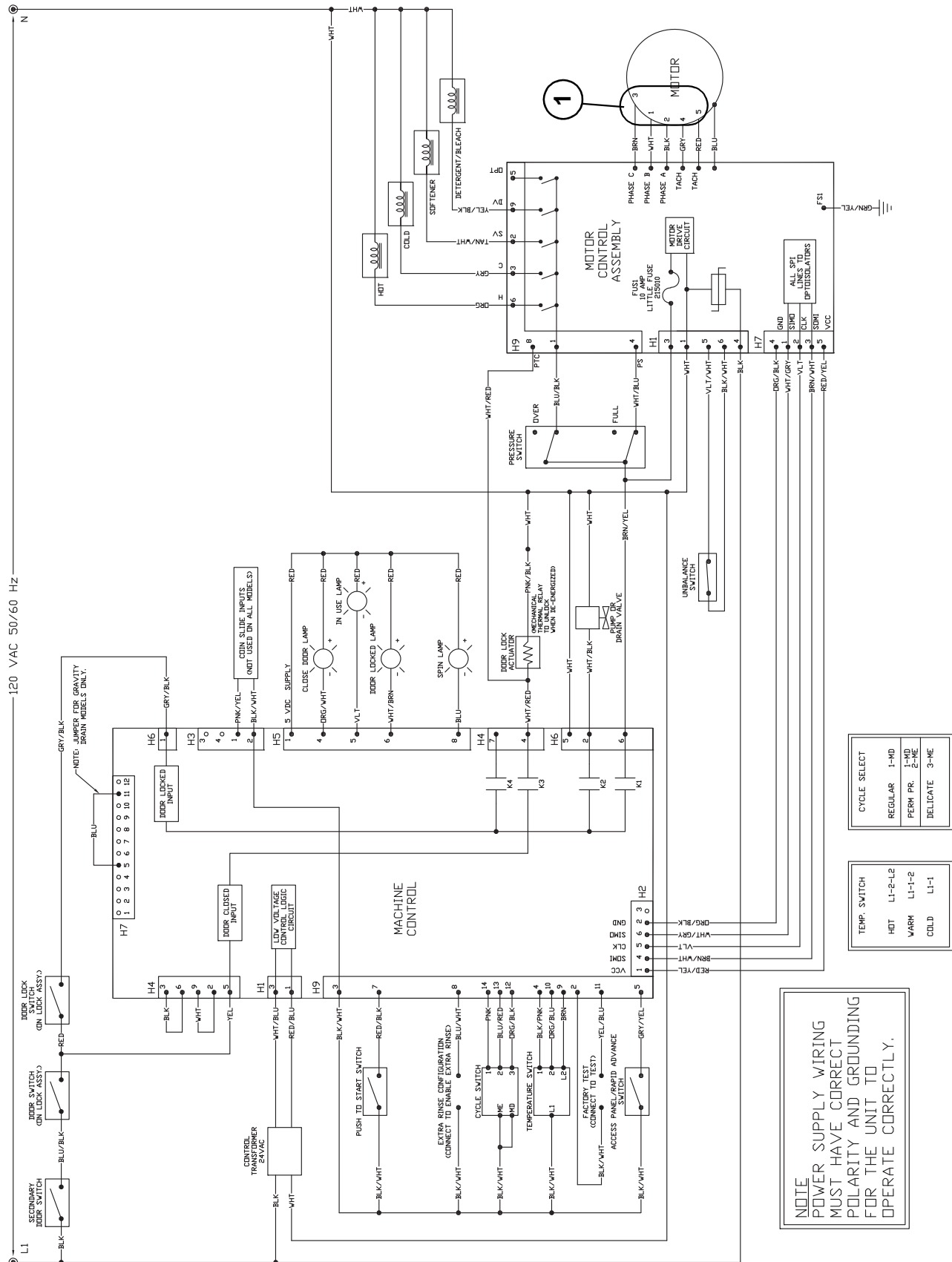
8. MOTOR WILL NOT RUN
(Door Locked/Final Spin and Tumble LEDs Flashing)



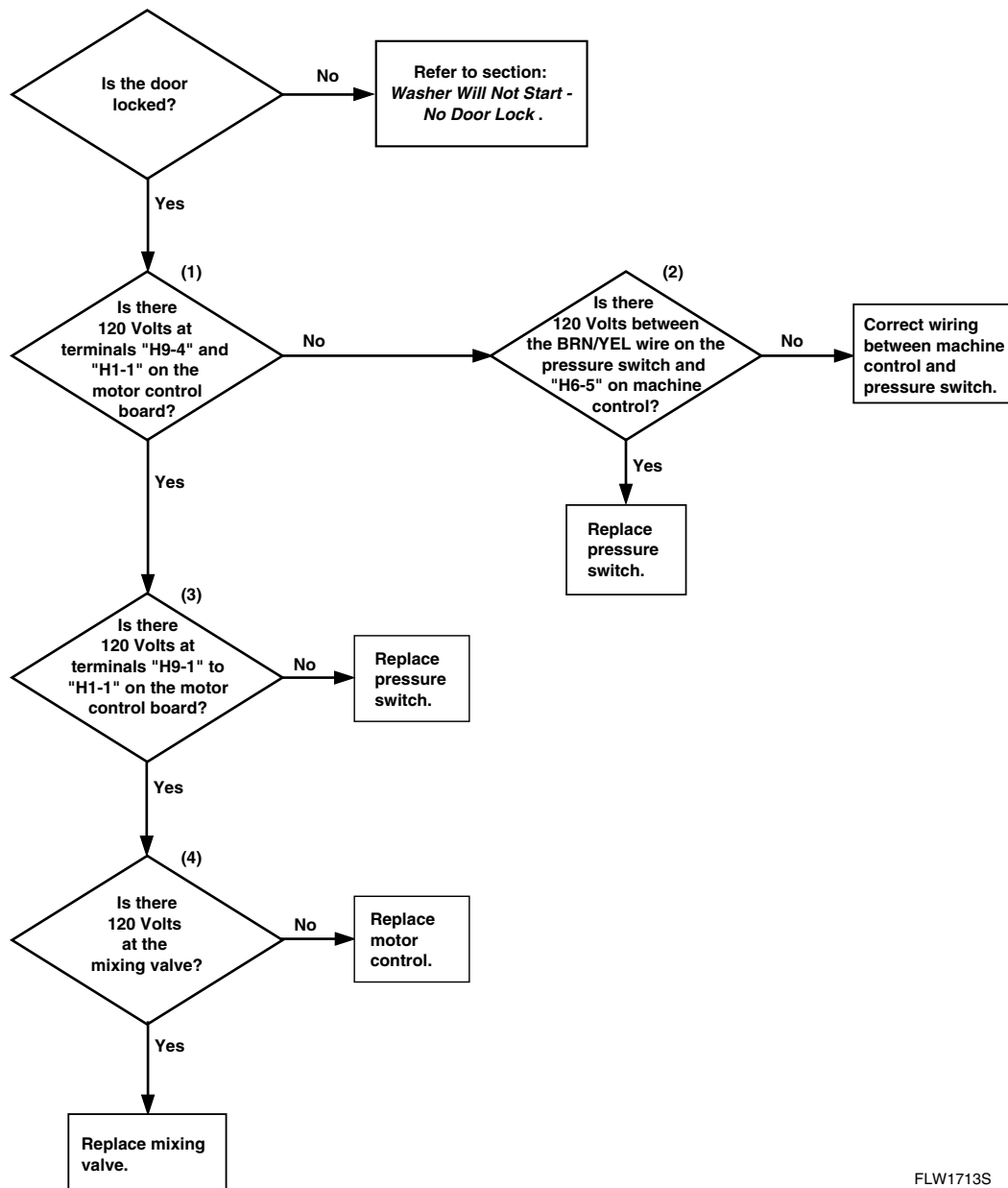
Motor Resistance Values:
Tach. Circuit: Approx. 115 ohms (Terminals 4-5)
Windings: Approx. 4 - 5 ohms (Terminals 1-2, 1-3, 2-3)

FLW1712S

MOTOR WILL NOT RUN
(Door Locked/Final Spin and Tumble LEDs Flashing)

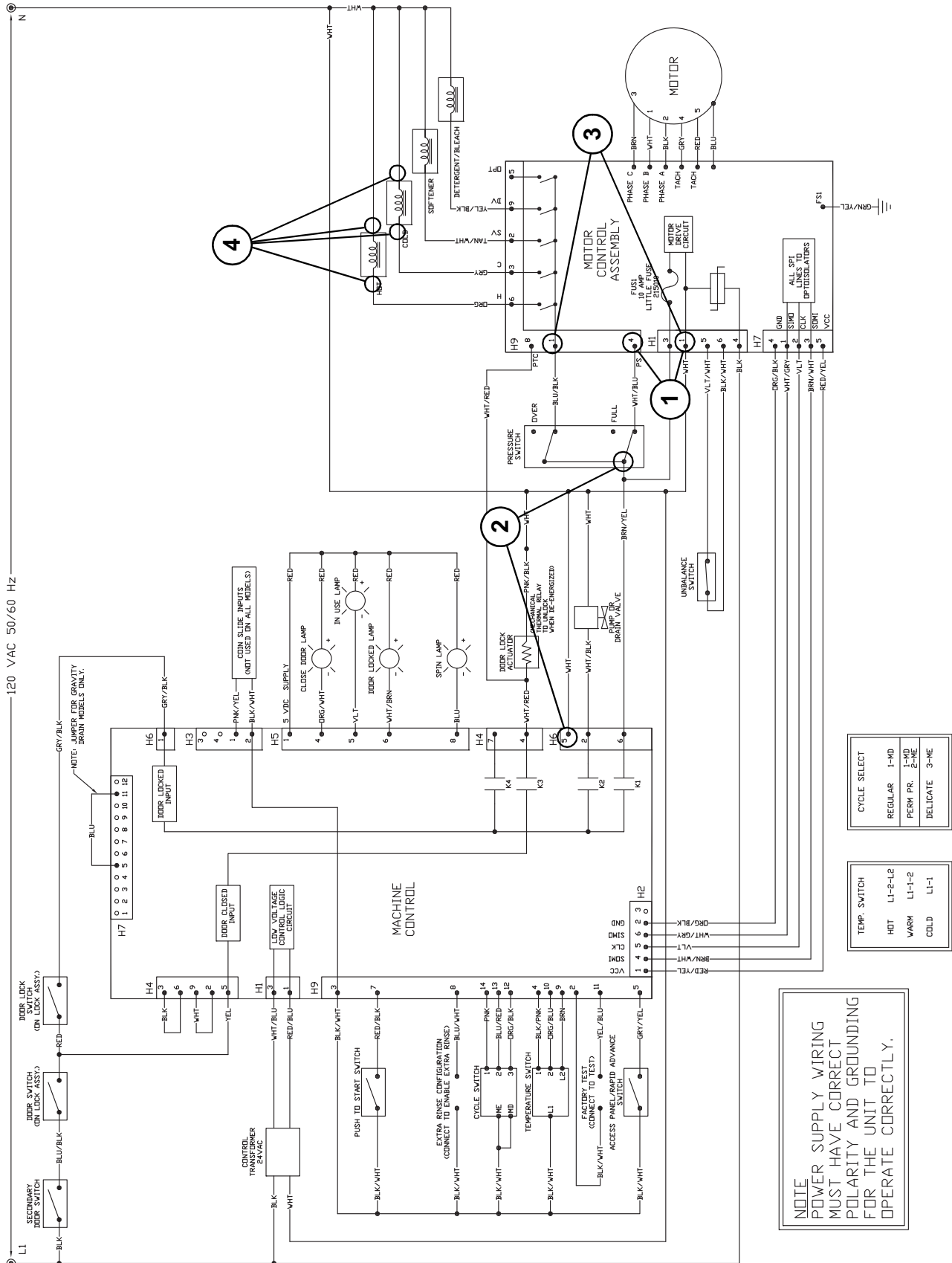


9. WASHER WILL NOT FILL **(In Use/Door Locked LEDs Flashing)**

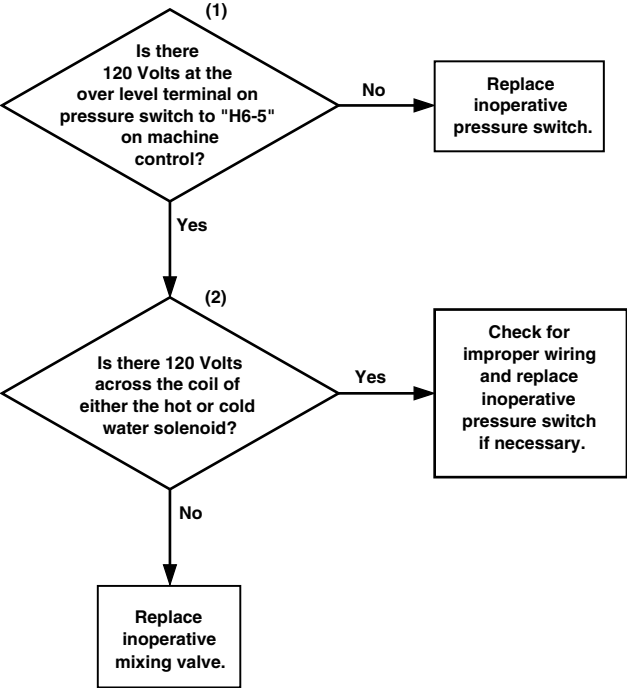


FLW1713S

WASHER WILL NOT FILL (In Use/Door Locked LEDs Flashing)

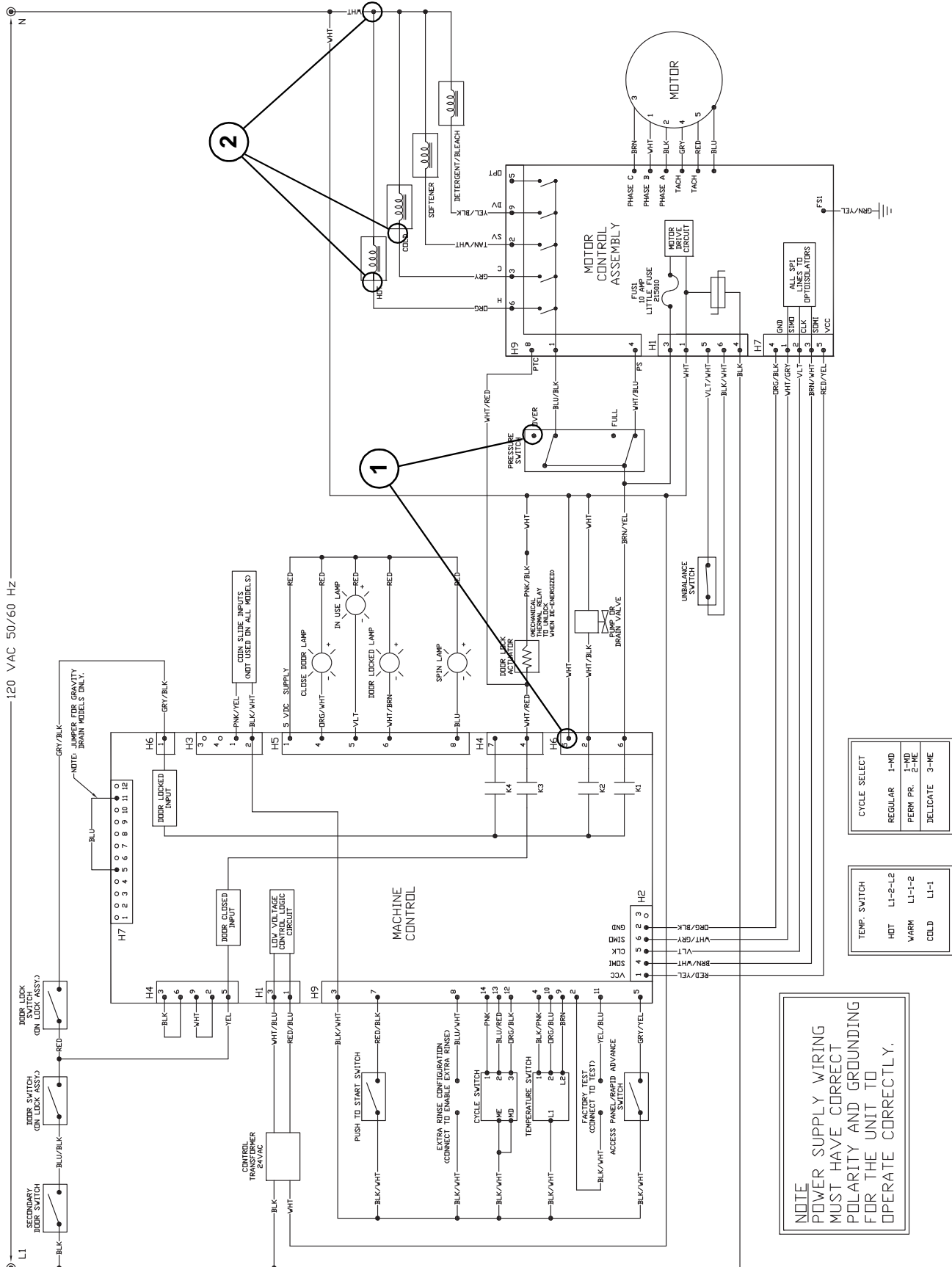


10. WASHER OVERFLOWS



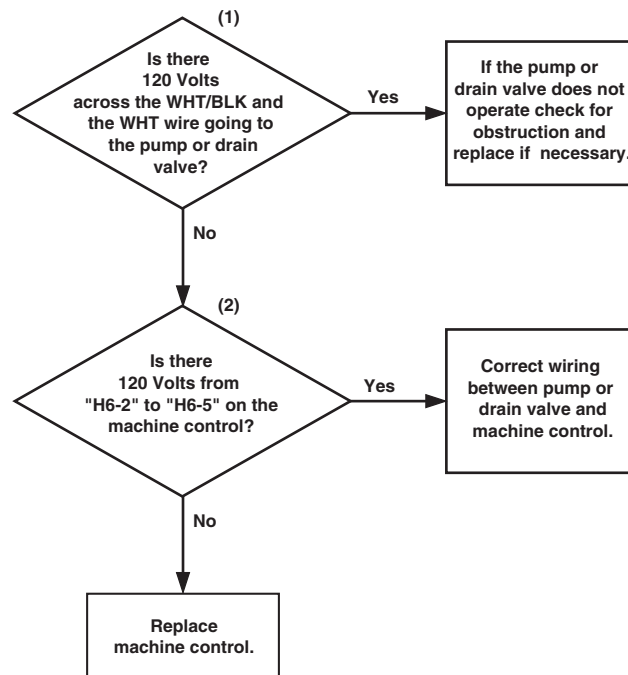
FLW1665S

WASHER OVERFLOWS



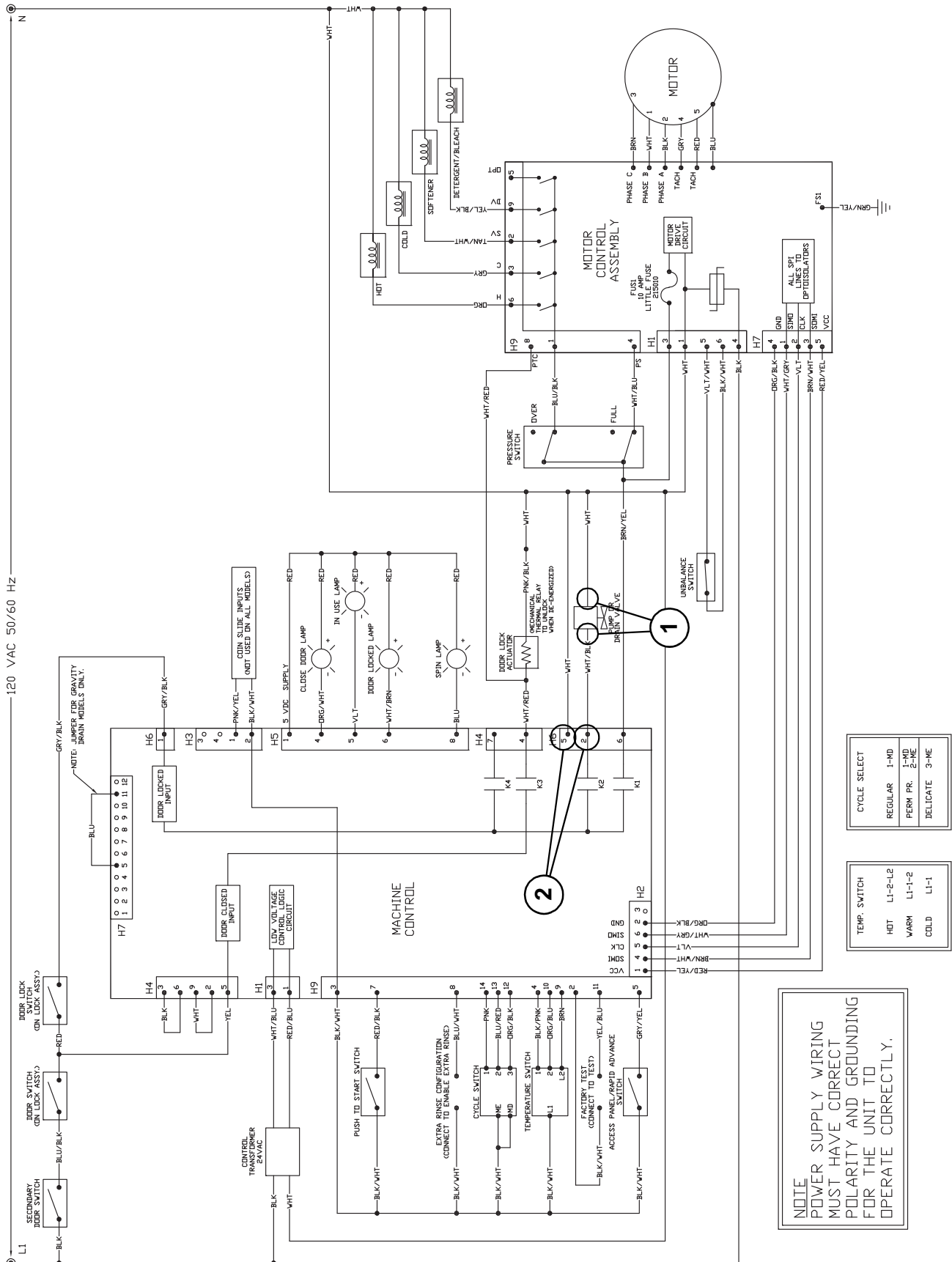
11. PUMP OR DRAIN VALVE DOES NOT OPERATE

NOTE: Check at beginning of spin/drain portion of cycle.

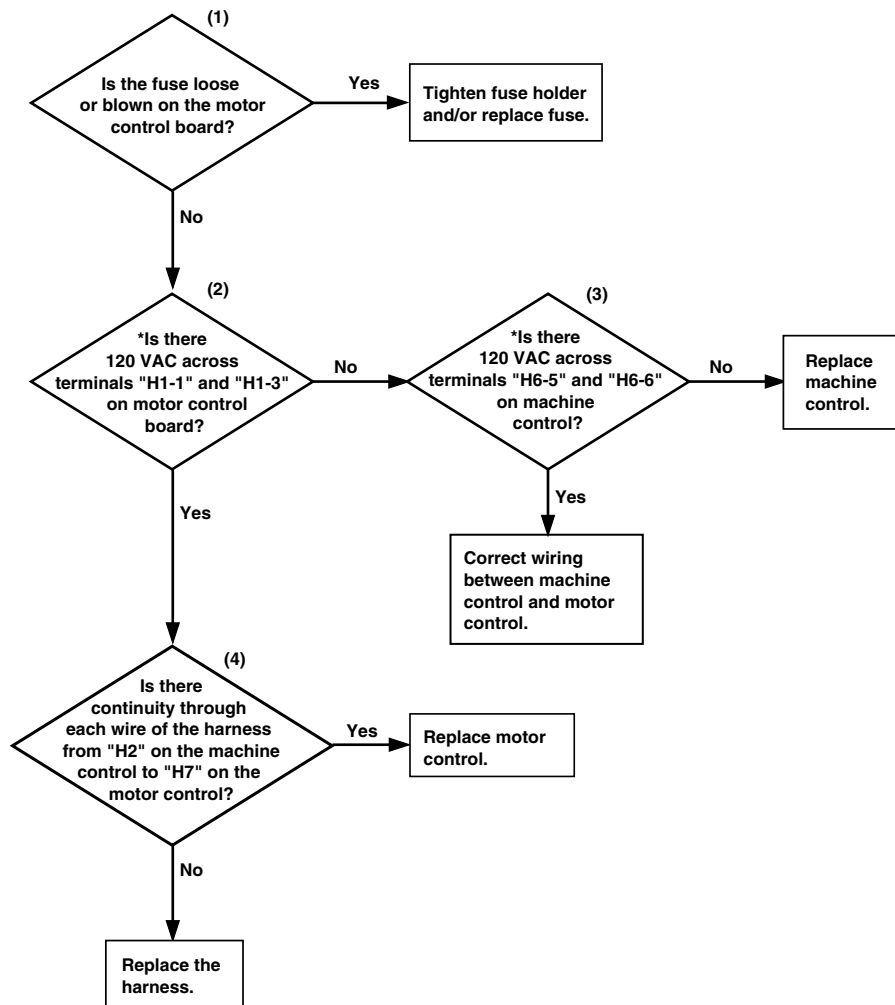


FLW1666S

PUMP OR DRAIN VALVE DOES NOT OPERATE



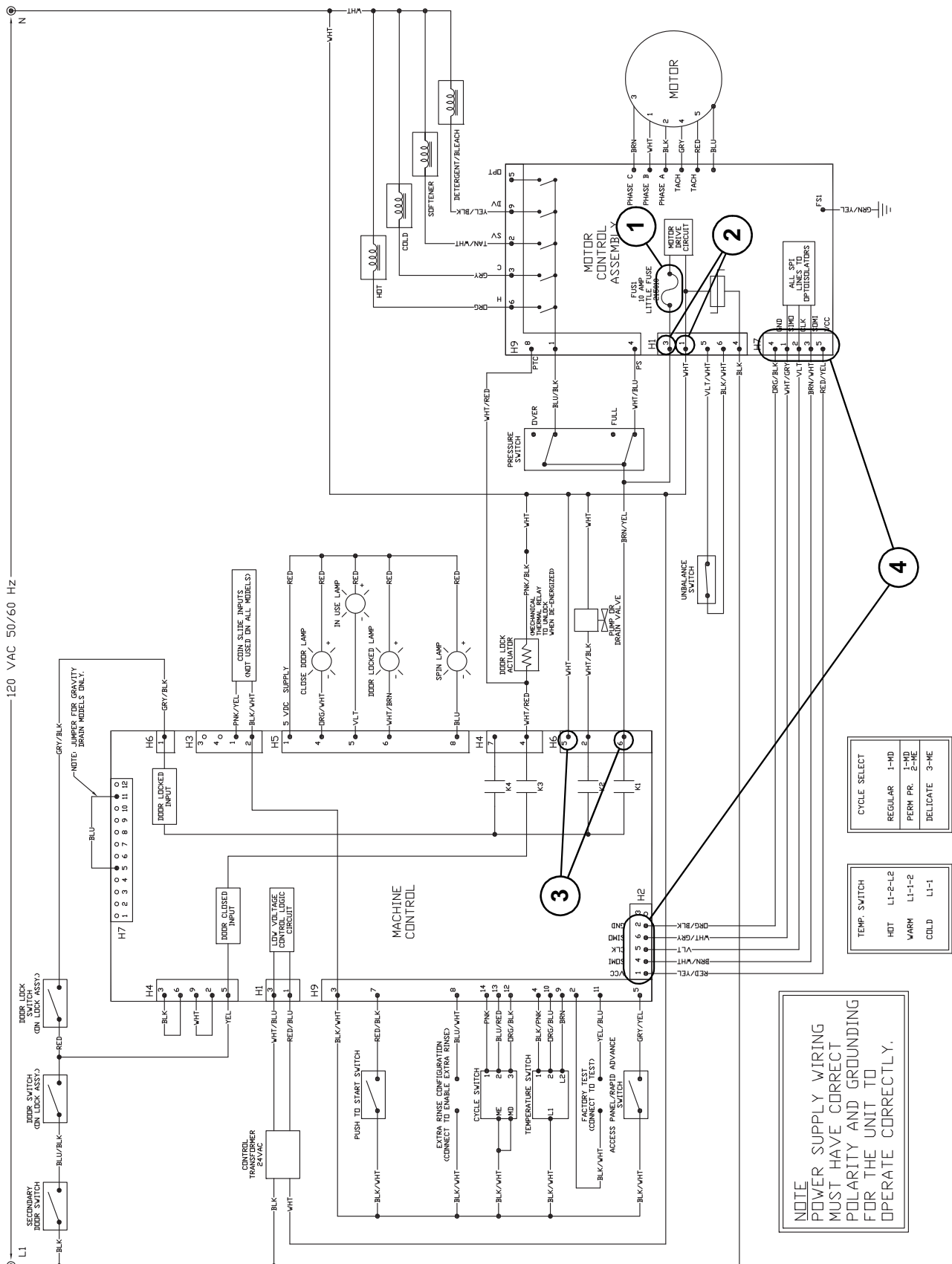
12. SERIAL COMMUNICATION ERROR (Final Spin and Tumble/Close Door LEDs Flashing)



FLW1714S

***NOTE: Machine must be restarted to check voltage.
Voltage is intermittently present for the first 15 seconds,
until error mode is displayed.**

SERIAL COMMUNICATION ERROR (Final Spin and Tumble/Close Door LEDs Flashing)



Notes

[illegible]

Troubleshooting

NetMaster and MDC Models



WARNING

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

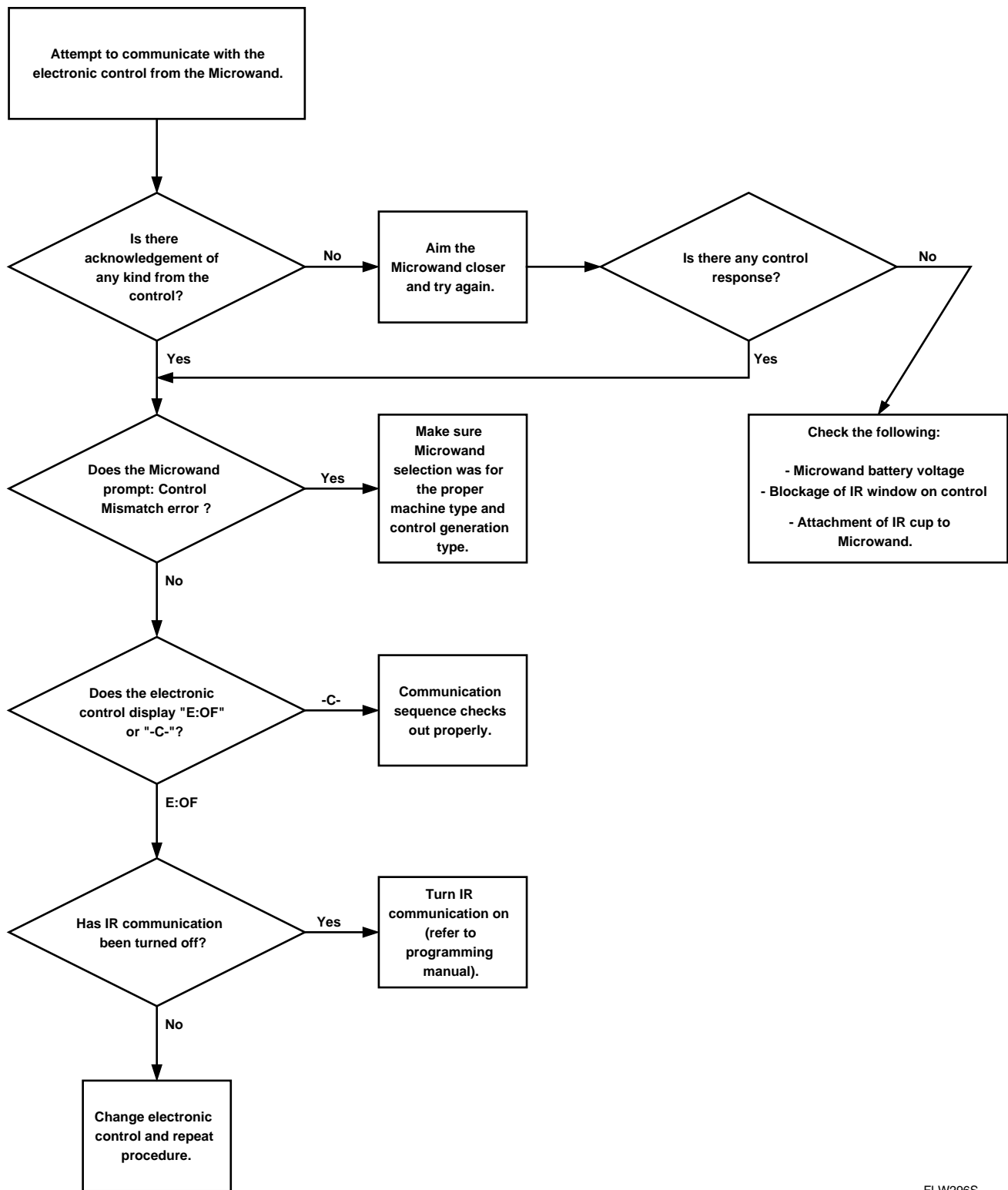
- Disconnect electric power to the washer before servicing.
- Never start the washer with any guards/panels removed.
- Whenever ground wires are removed during servicing, these ground wires must be reconnected to ensure that the washer is properly grounded.
- Motor not grounded! Disconnect electric power before servicing motor.

W485

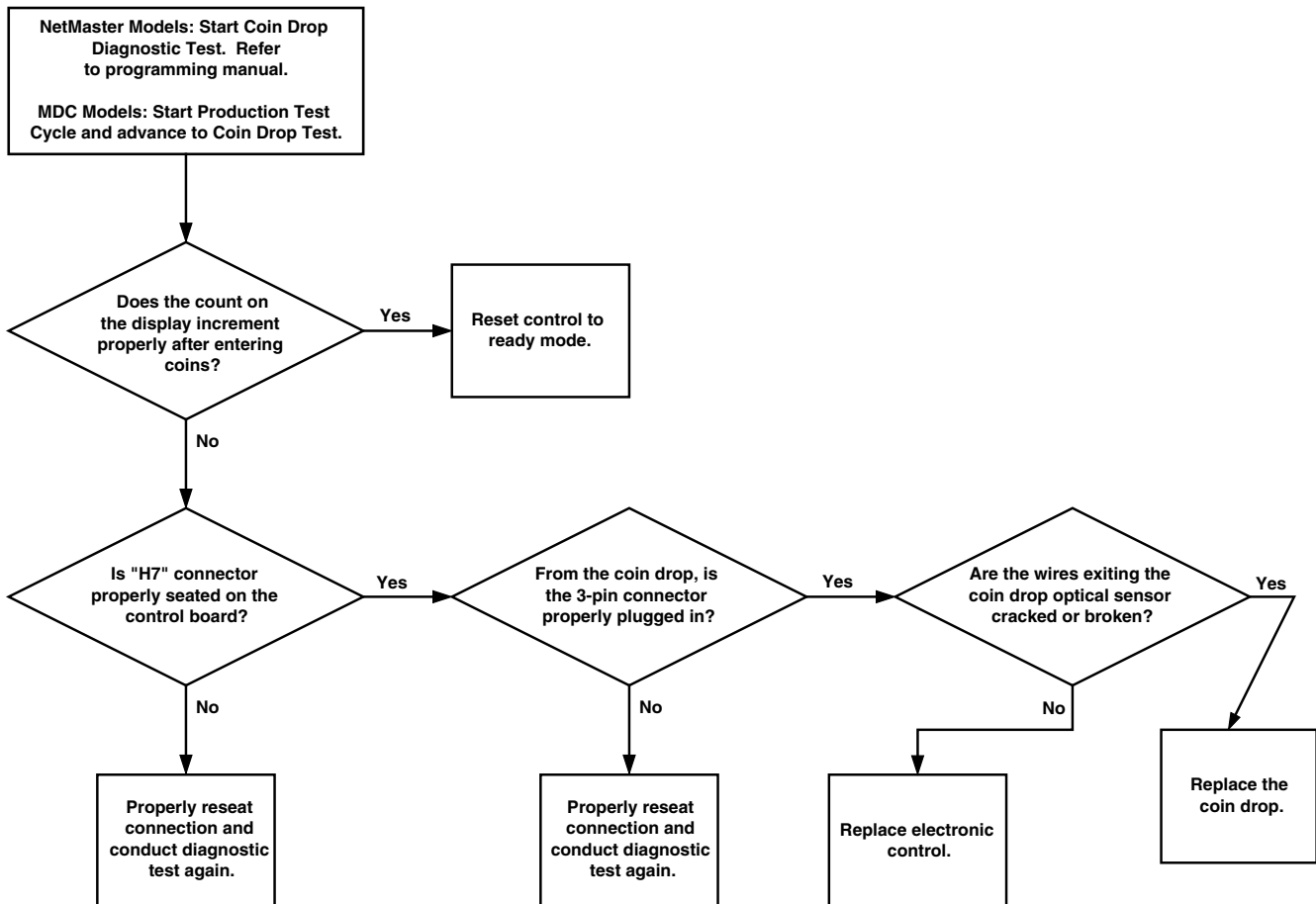
13. ERROR CODE LISTING

E:df	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, tachometer circuit open, inner basket locked up. This is a fatal error. Machine must be unpowered to reset.
E:SP	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: fuse blown on motor control board, wiring to motor control incorrect. This is a fatal error.
E:FL	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.
door	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.
E:do	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.
E:dL	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.

14. MICROWAND DOES NOT COMMUNICATE WITH CONTROL NetMaster Models Only

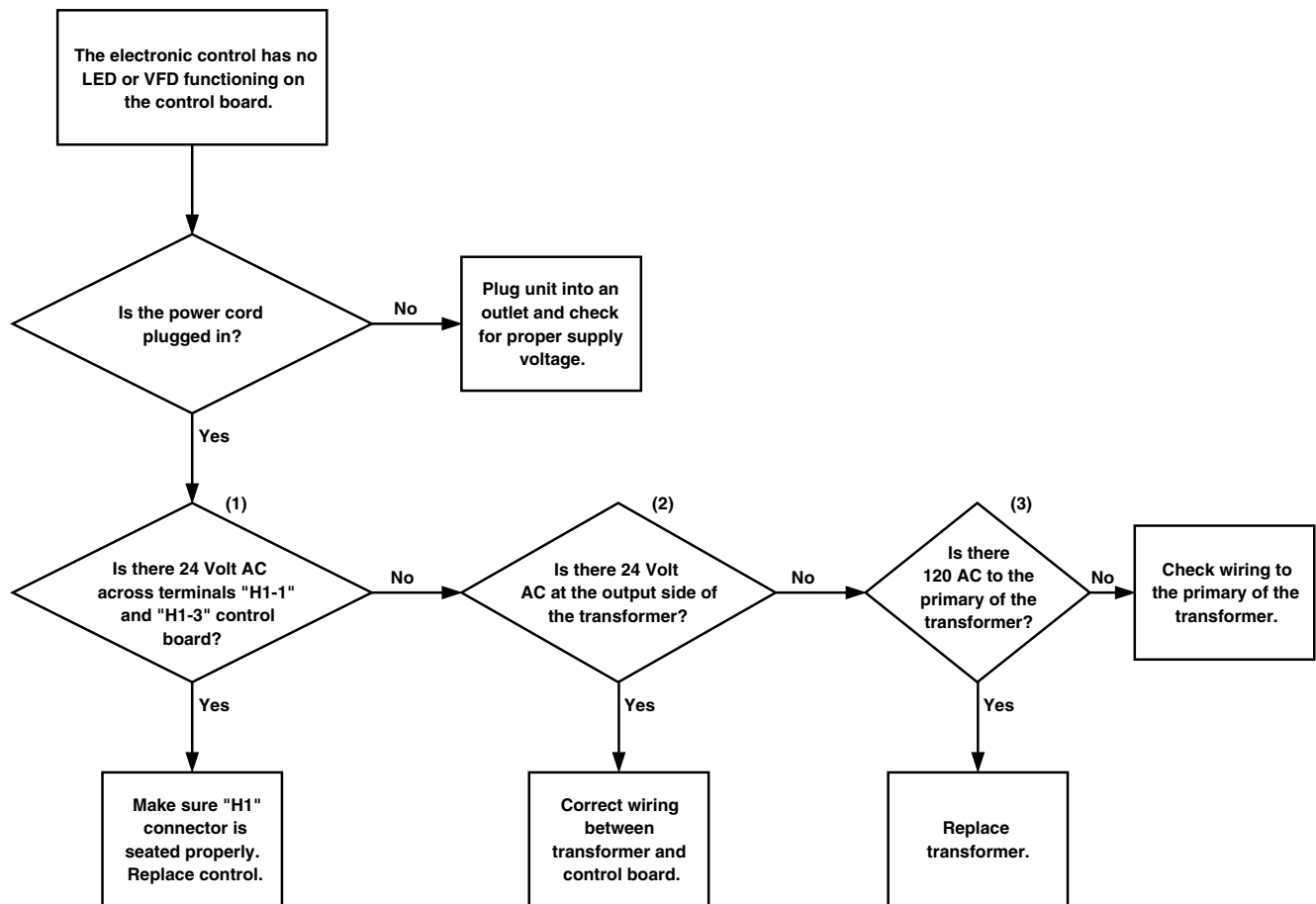


FLW296S

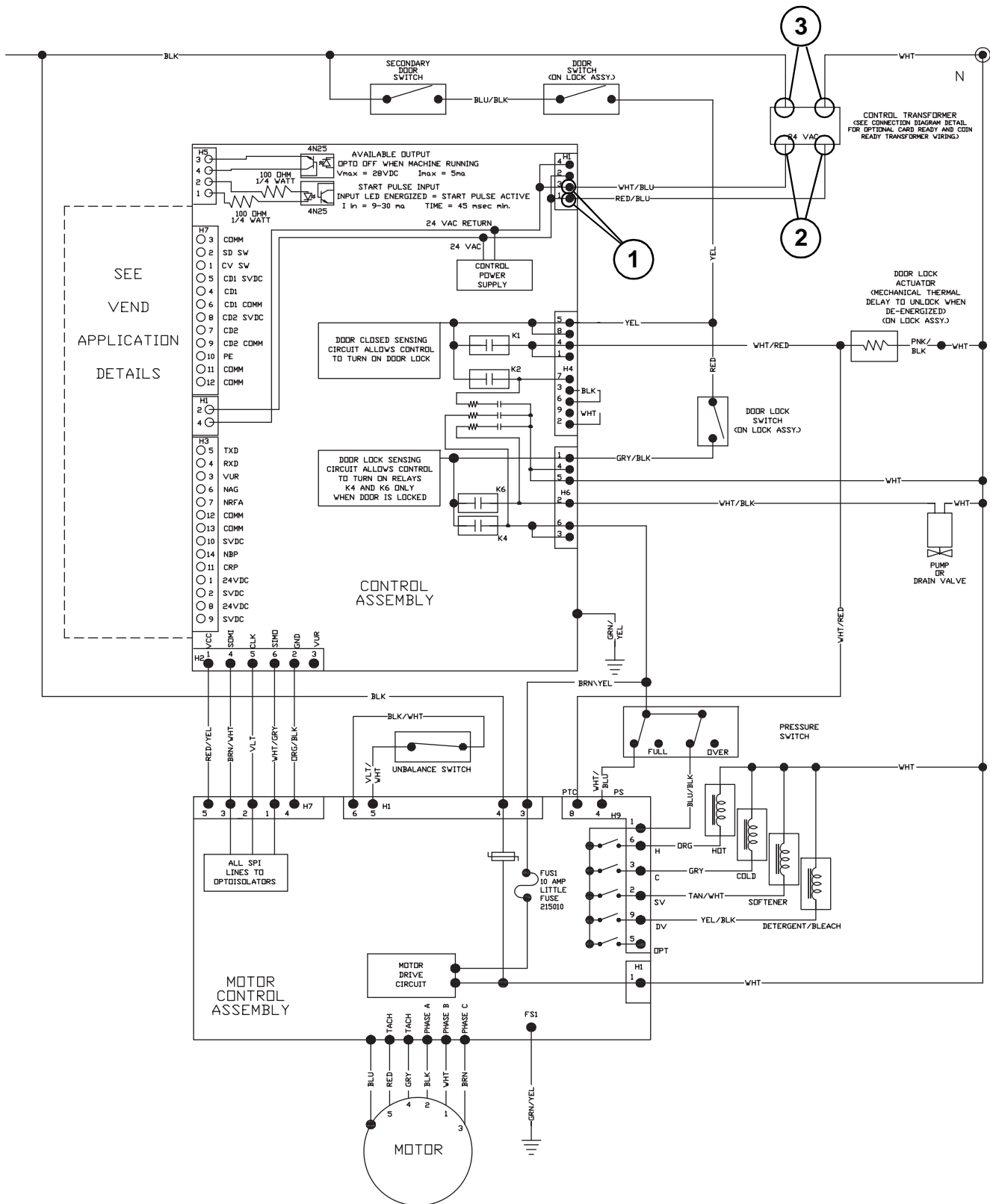
15. COINS IGNORED WHEN ENTERED

FLW1715S

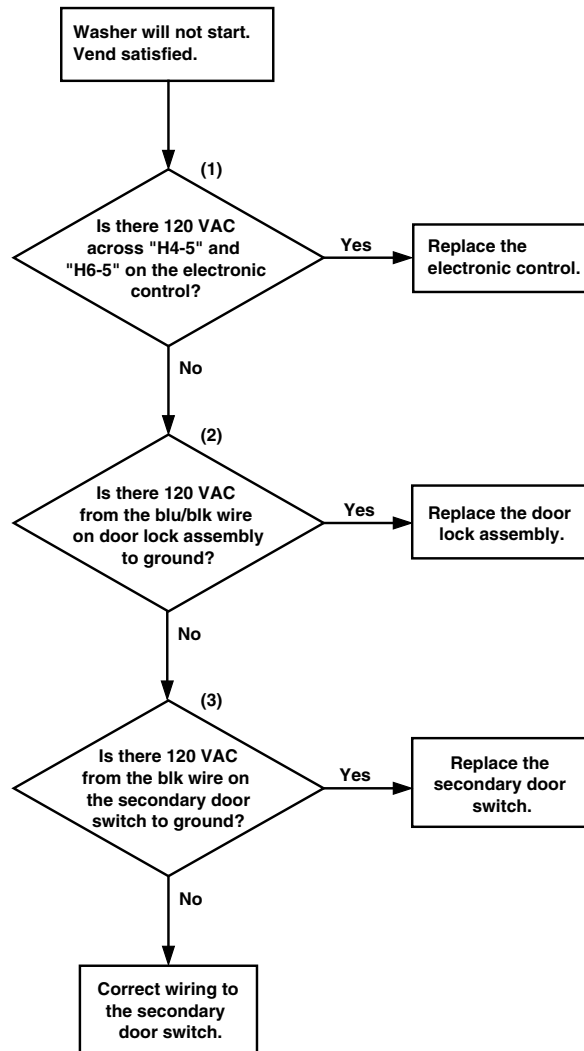
16. NO VISIBLE DISPLAY ON CONTROL



FLW298S

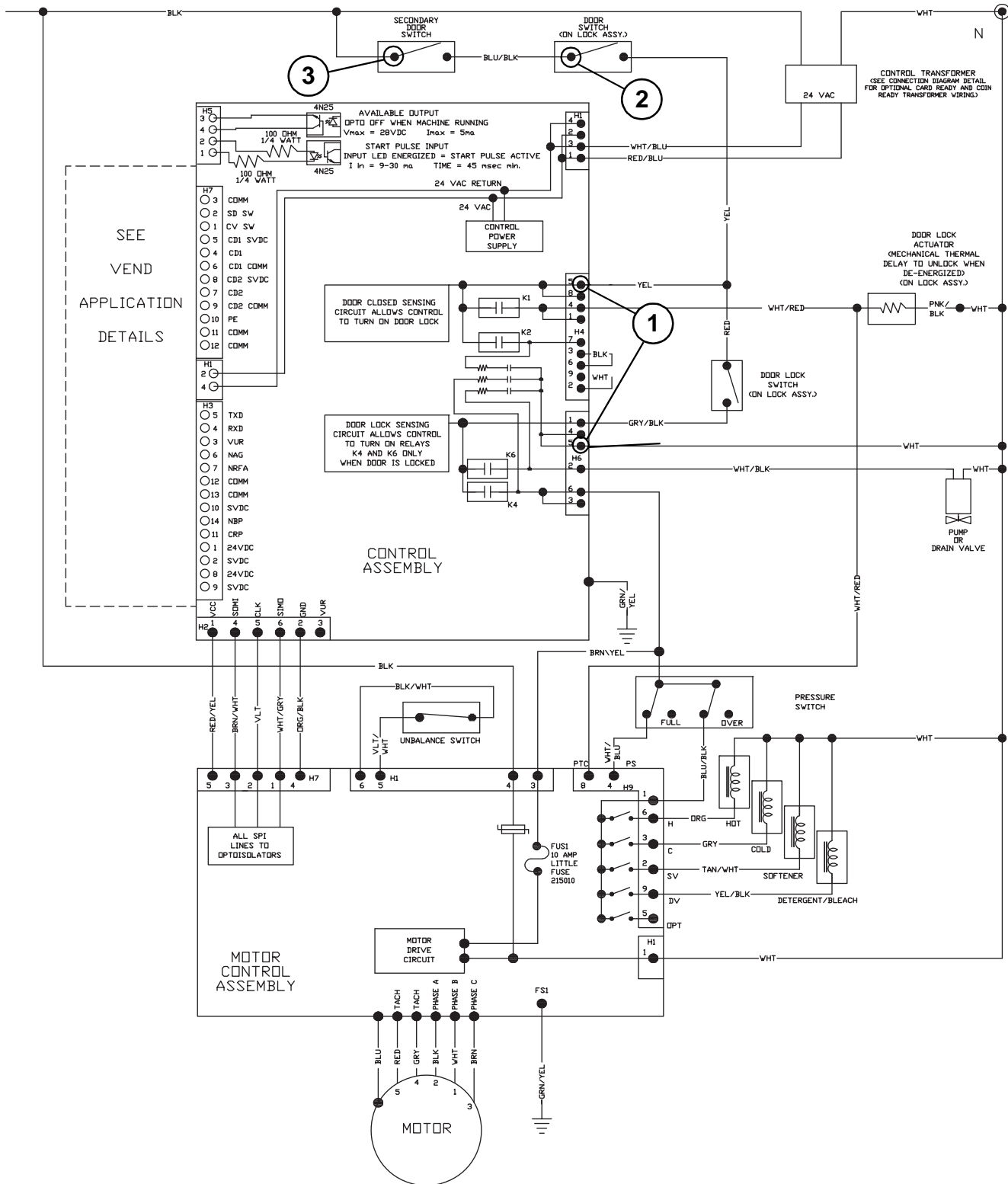


17. WASHER WILL NOT START – “DOOR” on display
(Door must be closed and attempting to lock)

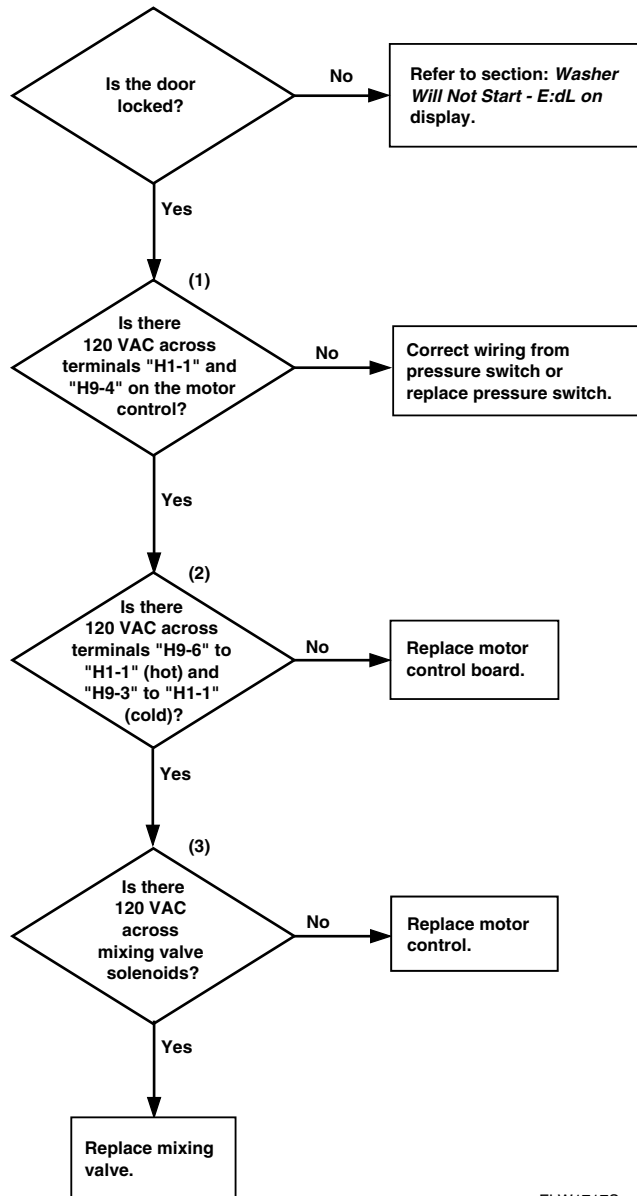


FLW1716S

WASHER WILL NOT START – “DOOR” on display (Door must be closed and attempting to lock)

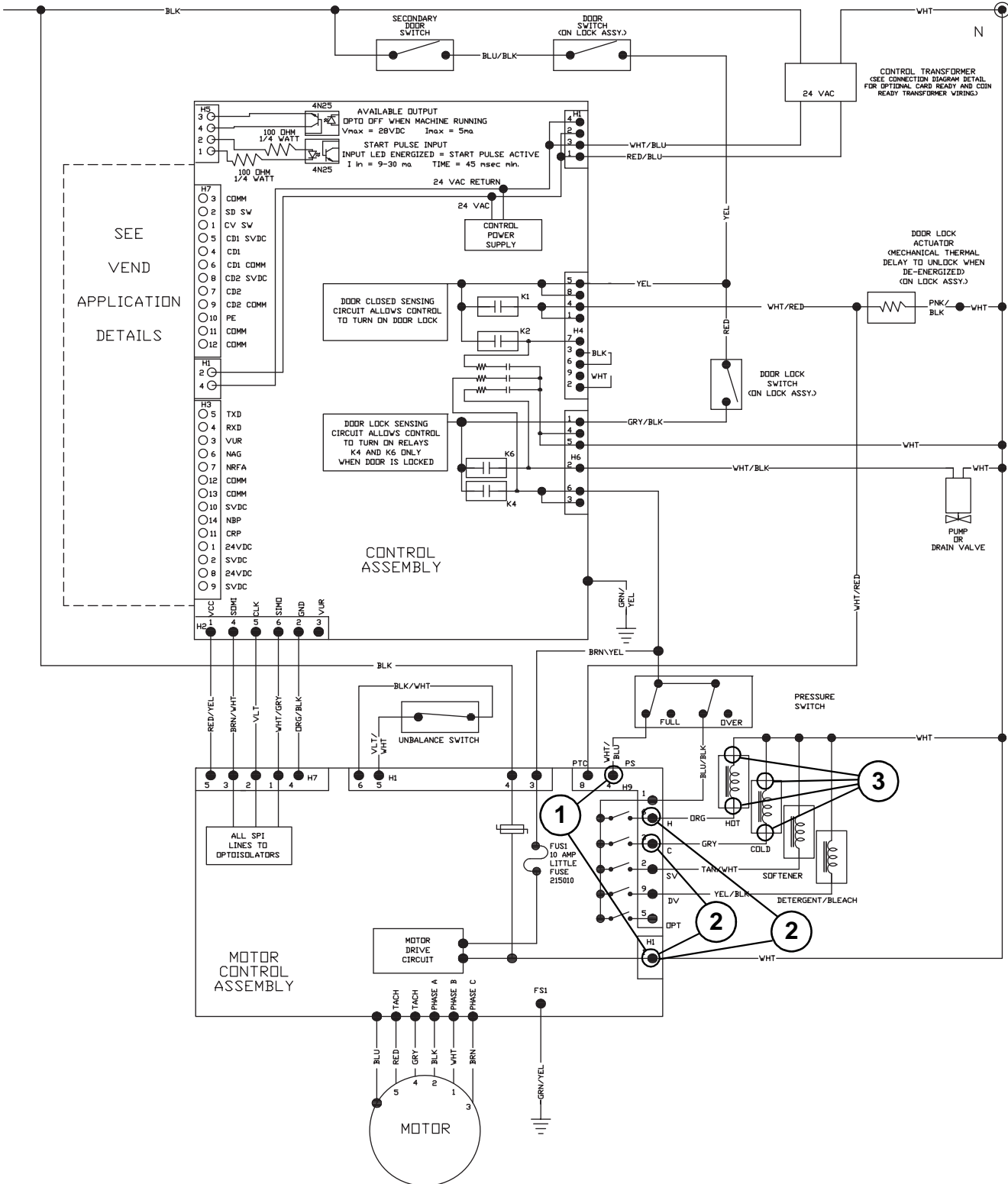


18. WASHER WILL NOT FILL (Machine Empty, No E:SP on Display)

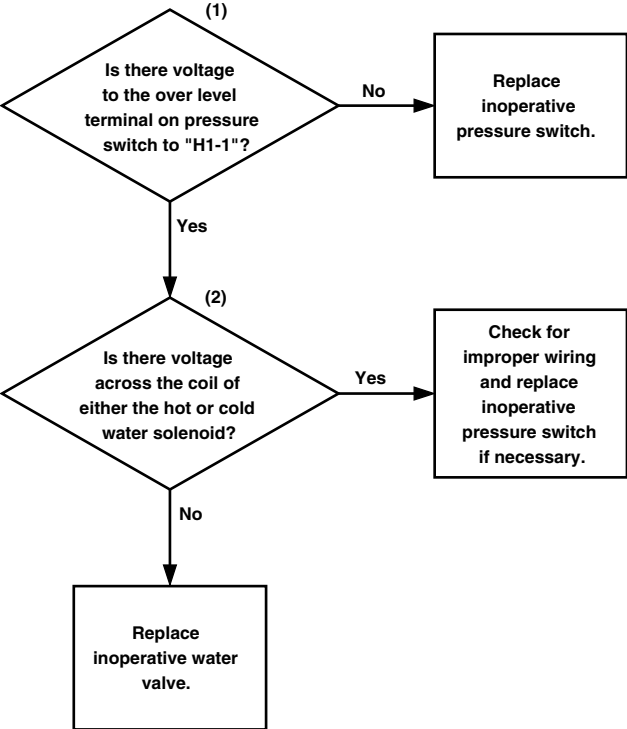


FLW1717S

WASHER WILL NOT FILL
(Machine Empty, No E:SP on Display)

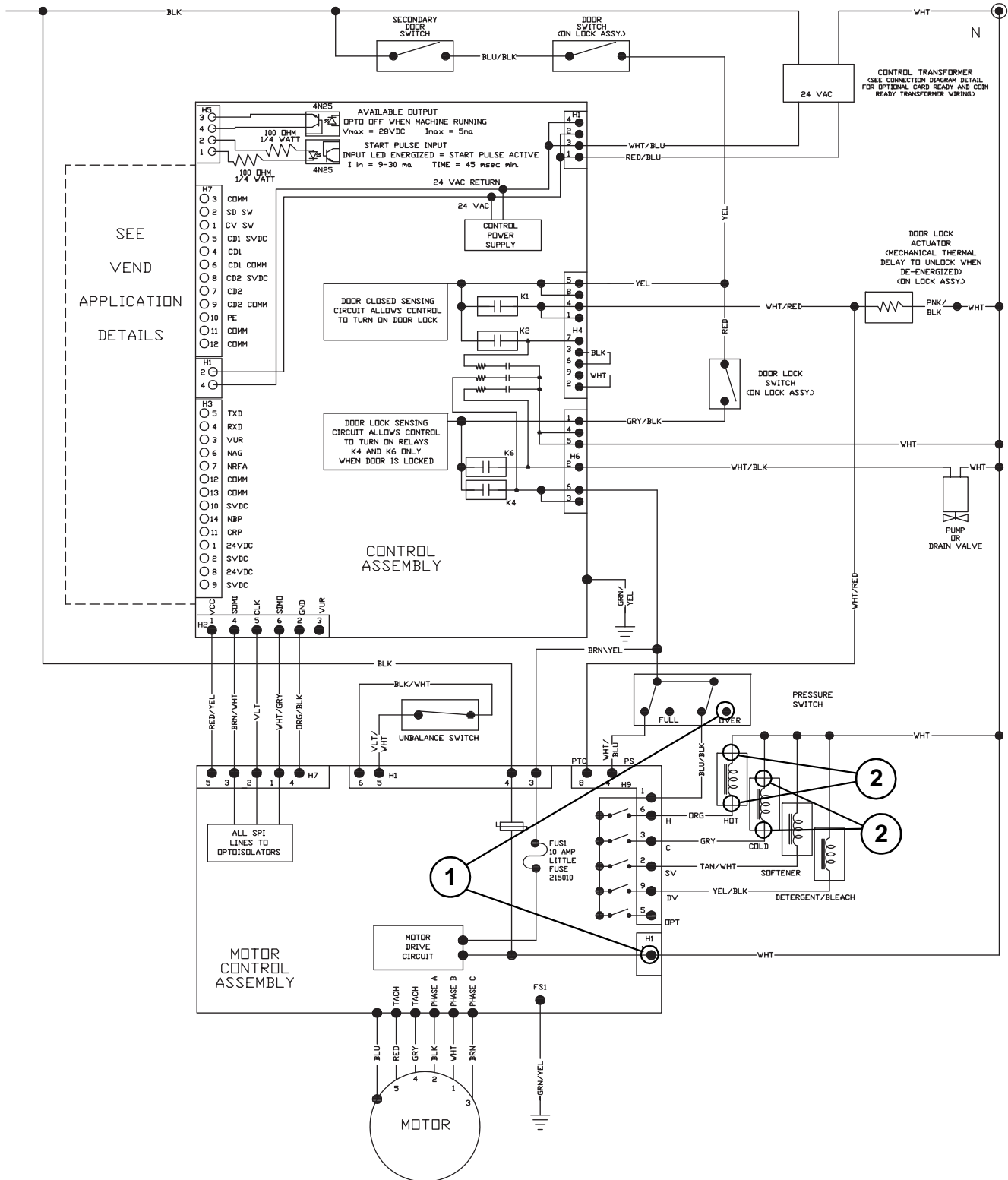


19. WASHER OVERFLOWS



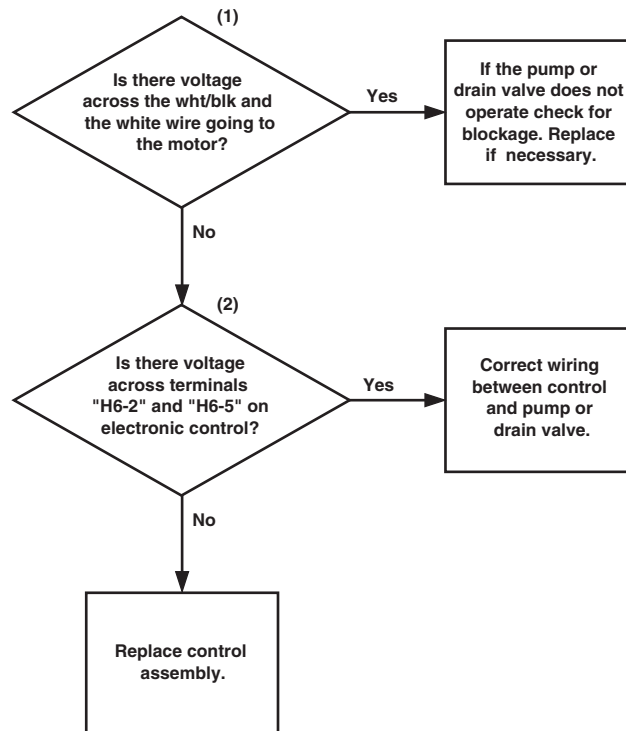
FLW1673S

WASHER OVERFLOWS



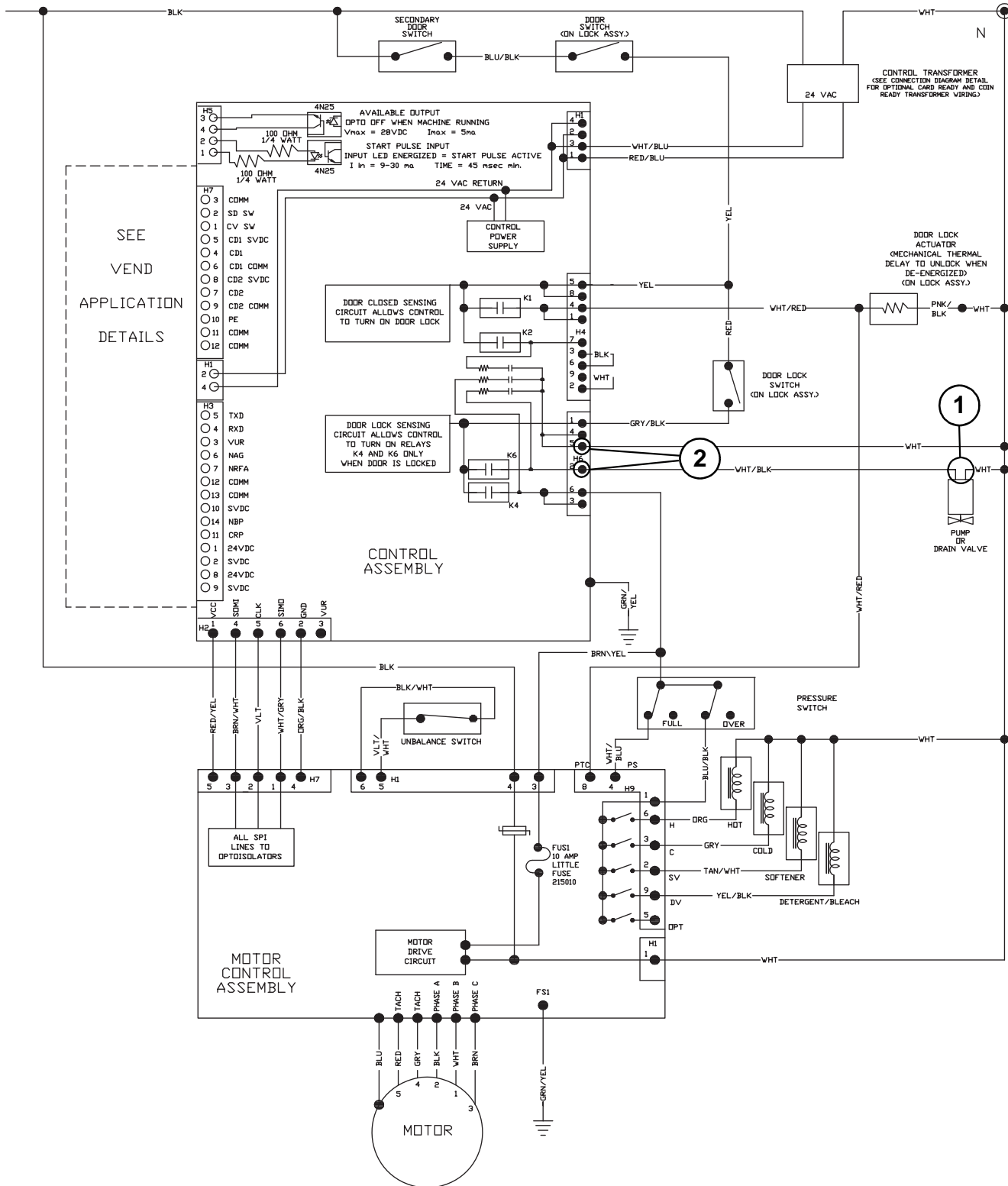
20. PUMP OR DRAIN VALVE DOES NOT OPERATE

NOTE: Check at beginning of spin/drain portion of cycle.

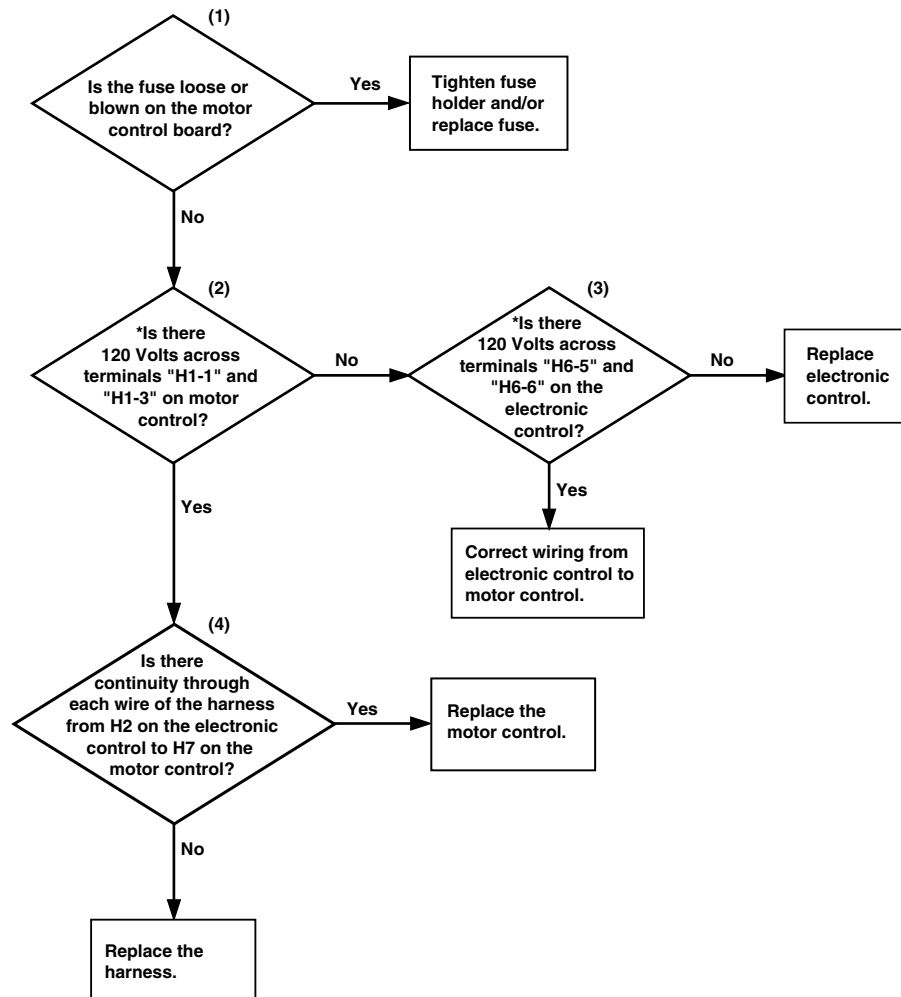


FLW1718S

PUMP OR DRAIN VALVE DOES NOT OPERATE



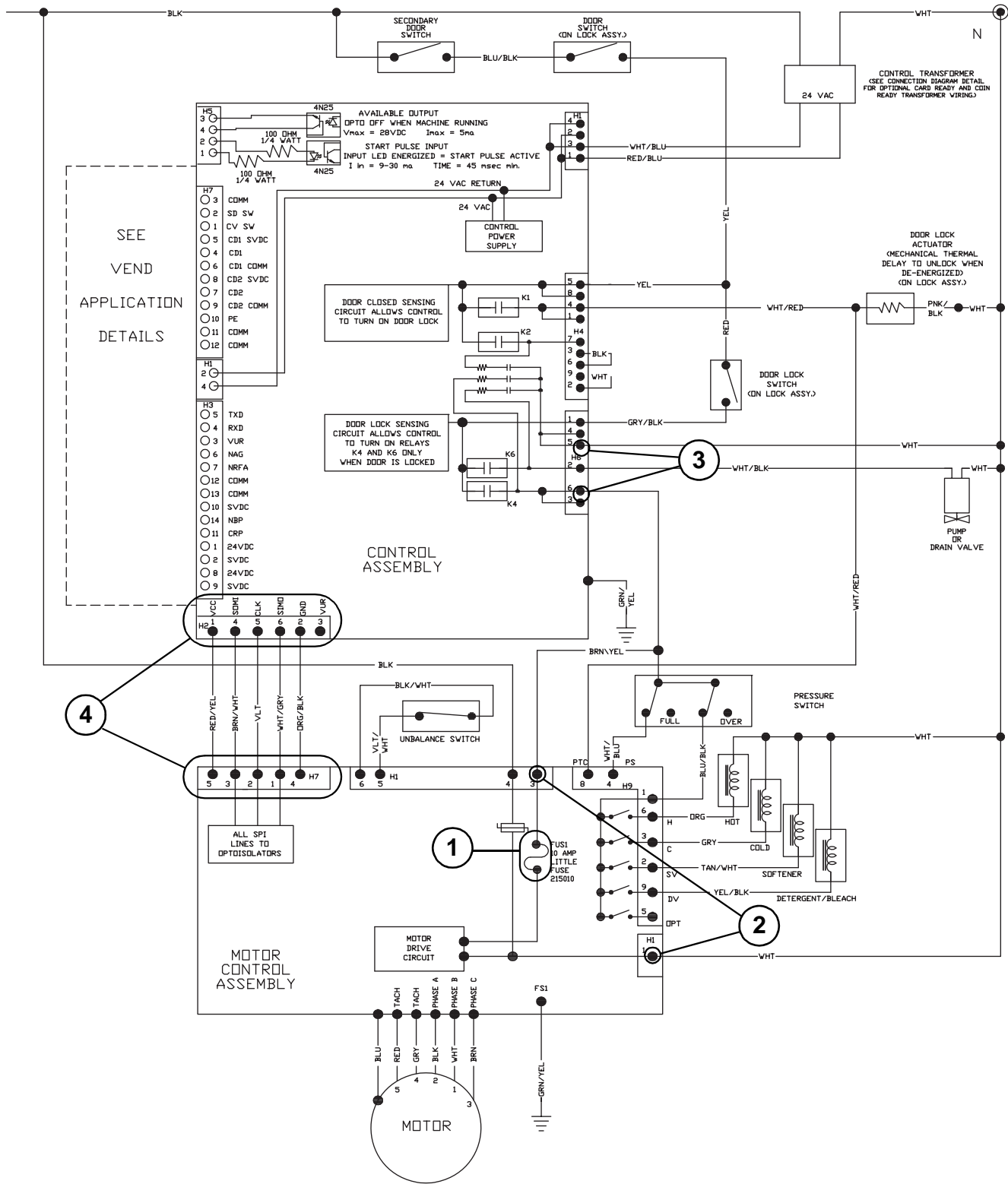
21. SERIAL COMMUNICATION ERROR (E:SP ON DISPLAY)



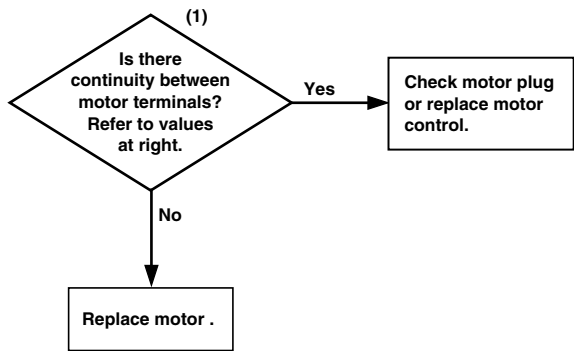
FLW1719S

***NOTE:** Machine must be restarted to check voltage. Voltage is intermittently present for the first 15 seconds until E:SP is displayed.

SERIAL COMMUNICATION ERROR (E:SP ON DISPLAY)

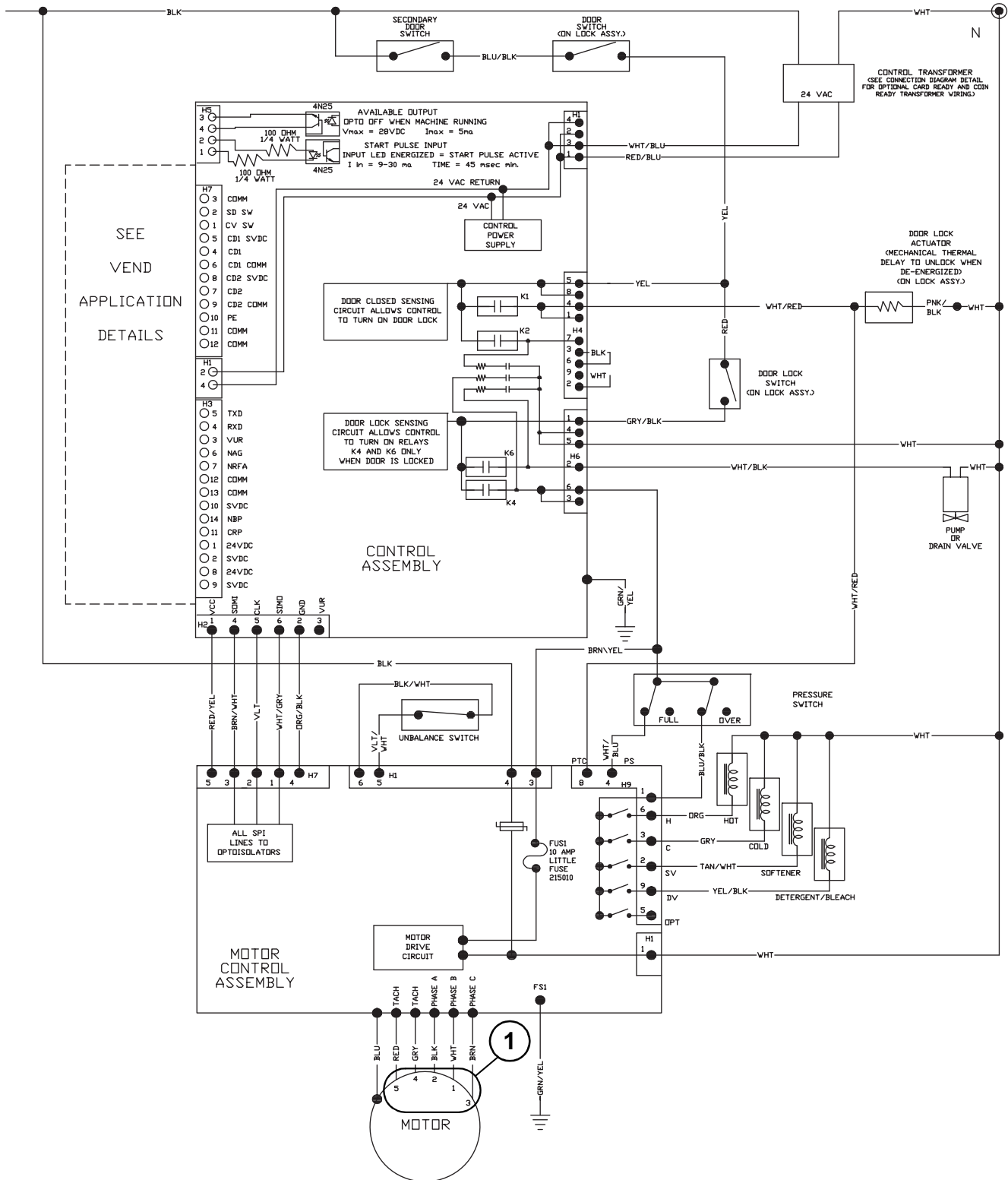


22. MOTOR DOES NOT RUN (E:DF ON DISPLAY)



Motor Resistance Values:
Tach. Circuit: Approx. 115 ohms (Terminals 4-5)
Windings: Approx. 4 - 5 ohms (Terminals 1-2, 1-3, 2-3)

FLW1720S

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.
- Motor not grounded! Disconnect electric power before servicing motor.

W485

23. WALL RECEPTACLE POLARITY CHECK

Refer to *Figure 10*.

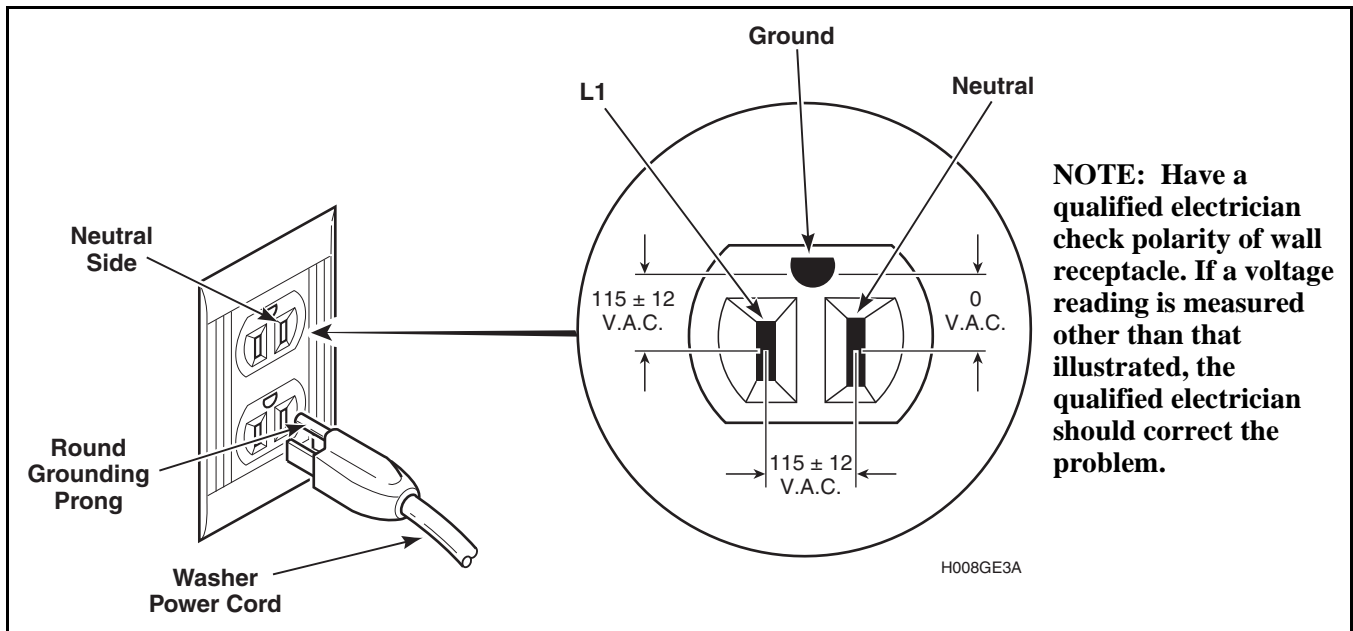


Figure 10



WARNING

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

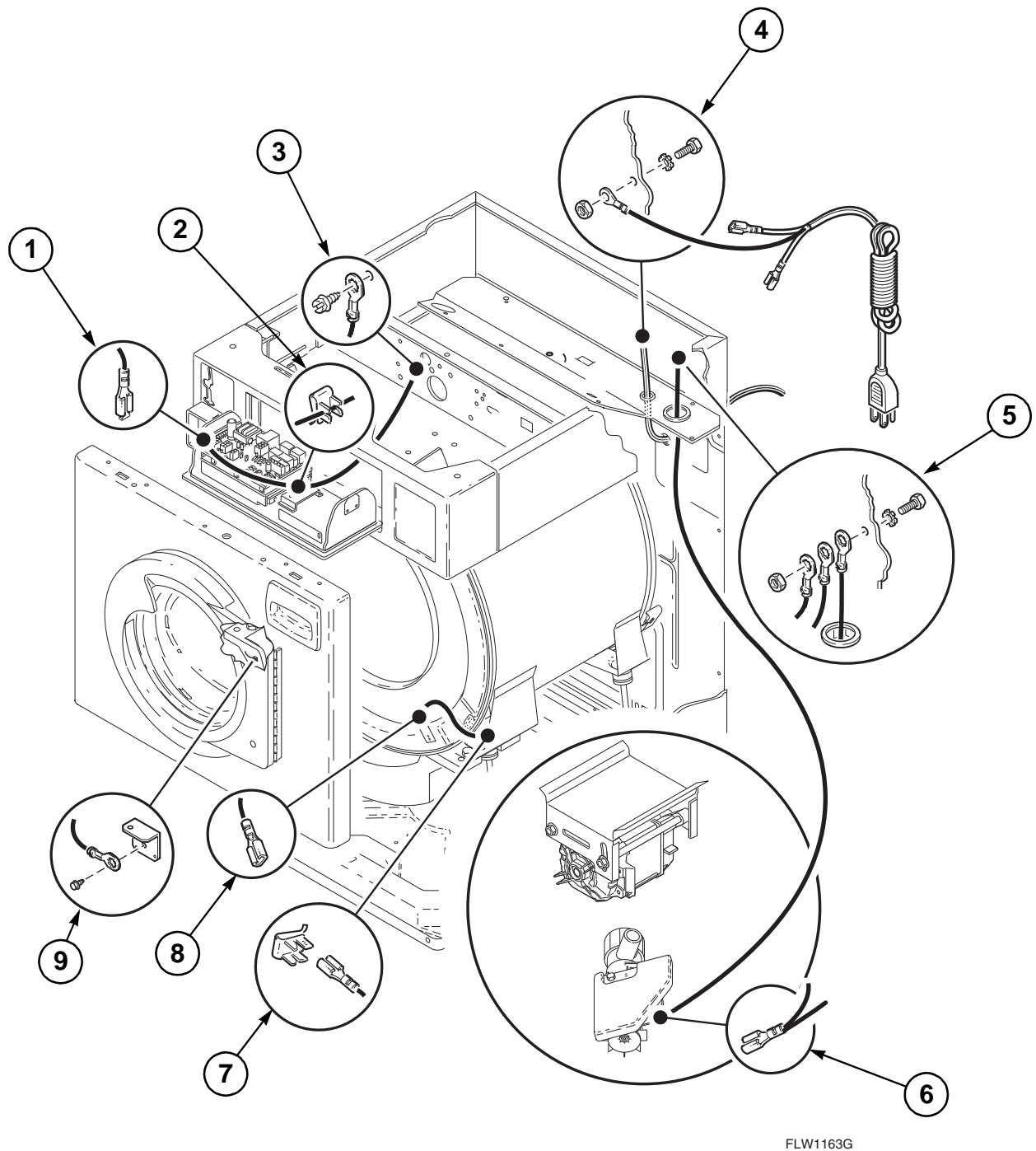
- Disconnect electric power to the washer before servicing.
- Never start the washer with any guards/panels removed.
- Whenever ground wires are removed during servicing, these ground wires must be reconnected to ensure that the washer is properly grounded.
- Motor not grounded! Disconnect electric power before servicing motor.

W485

24. MACHINE GROUND CONNECTIONS - Front Control Washers

Refer to *Figure 11*.

- ① Ground to Electronic Control
- ② Ground to Control Panel Assembly
- ③ Ground to Control Cabinet
- ④ Ground Power Cord to Control Cabinet Wrapper
- ⑤ Grounding Hardware to Control Cabinet Wrapper
- ⑥ Ground to Electric Drain Pump/Drain Valve
- ⑦ Ground to Outer Tub
- ⑧ Ground to Outer Tub Front
- ⑨ Ground to Outer Tub to Cabinet



Front Control Washers

Figure 11



WARNING

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

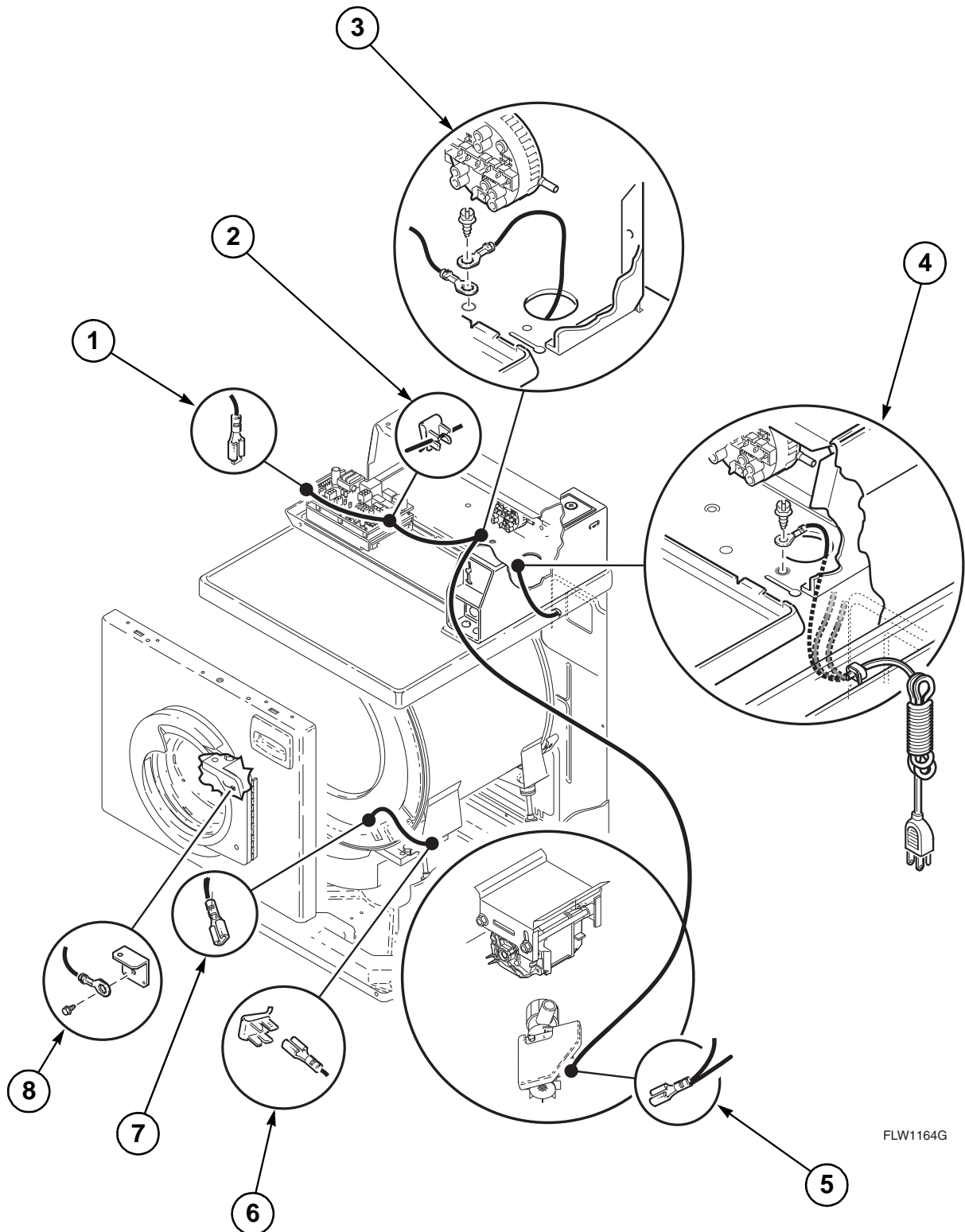
- Disconnect electric power to the washer before servicing.
- Never start the washer with any guards/panels removed.
- Whenever ground wires are removed during servicing, these ground wires must be reconnected to ensure that the washer is properly grounded.
- Motor not grounded! Disconnect electric power before servicing motor.

W485

25. MACHINE GROUND CONNECTIONS - Rear Control Washers (Electronic Control Models)

Refer to *Figure 12*.

- ① Ground to Electronic Control
- ② Ground to Control Panel
- ③ Ground to Cabinet Top
- ④ Ground Power Cord to Cabinet Top
- ⑤ Ground to Electric Drain Pump
- ⑥ Ground to Outer Tub
- ⑦ Ground to Outer Tub Front
- ⑧ Ground to Outer Tub to Cabinet



Rear Control Washers (Electronic Control Models)

Figure 12



WARNING

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

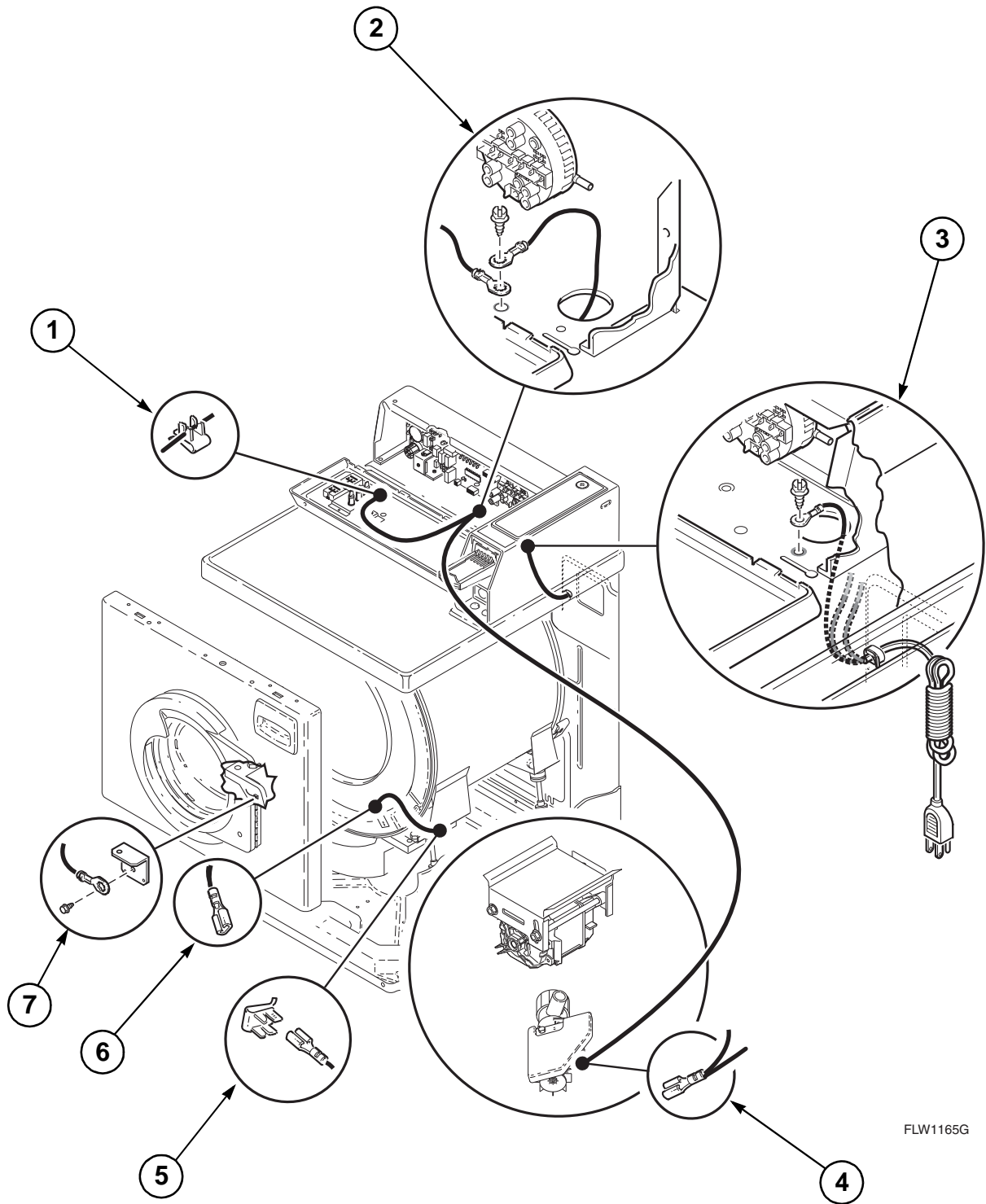
- Disconnect electric power to the washer before servicing.
- Never start the washer with any guards/panels removed.
- Whenever ground wires are removed during servicing, these ground wires must be reconnected to ensure that the washer is properly grounded.
- Motor not grounded! Disconnect electric power before servicing motor.

W485

26. MACHINE GROUND CONNECTIONS - Rear Control Washers (Electromechanical Models)

Refer to *Figure 13*.

- ① Ground to Control Panel Assembly
- ② Ground to Cabinet Top
- ③ Ground Power Cord to Cabinet Top
- ④ Ground to Electric Drain Pump/Drain Valve
- ⑤ Ground to Outer Tub
- ⑥ Ground to Outer Tub Front
- ⑦ Ground to Outer Tub to Cabinet



Rear Control Washers (Electromechanical Models)

Figure 13

Notes

This image shows a single sheet of white paper with horizontal ruling lines. The lines are evenly spaced and run across the width of the page. There are no margins, text, or other markings on the paper.

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.
- Motor not grounded! Disconnect electric power before servicing motor.

W485

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

27. CONTROL PANEL (Front Control Washers)

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 14, 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 14, Step 2*.
- c. Remove control panel away from control cabinet as far as wires permit. Refer to *Figure 14, 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.

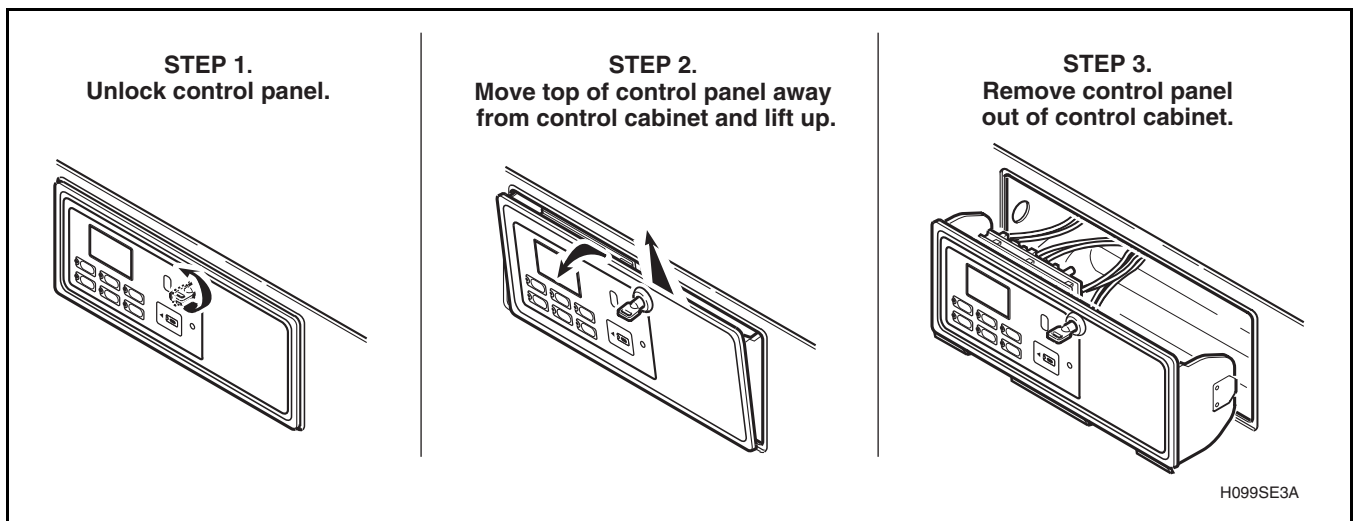


Figure 14



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.
- Motor not grounded! Disconnect electric power before servicing motor.

W485

28. CONTROL PANEL (Rear Control Washers) Electromechanical Models

- a. Remove two control panel attaching screws holding control panel to control hood. Refer to *Figure 15*. Lay assembly forward on protective padding on cabinet top.
- b. While supporting control panel, disconnect all wires from control panel components. DO NOT pull on wires.

NOTE: Refer to wiring diagram when reconnecting wires.

- c. Loosen setscrews holding switch knobs to temperature and motor switch shafts and pull knobs off switch shafts. Refer to *Figure 16*.
- d. Remove nuts holding temperature and motor switches to control panel and remove switches. Refer to *Figure 16*.
- e. Remove nut holding push-to-start switch to control panel and remove switch. Refer to *Figure 16*.
- f. Squeeze locking tabs together holding indicator light(s) to control panel and pull light out rear of control panel. Refer to *Figure 16*.
- g. Remove ground clip holding ground wire to control panel.
- h. **Motor Speed Switch or Wash Temperature Switch:**

- (1) Remove two control panel attaching screws. Refer to *Figure 15*. Lay assembly forward on protective pad on cabinet top.
- (2) Loosen setscrew holding switch knob to switch shaft. Refer to *Figure 17*.
- (3) Remove knurled nut holding switch to control panel. Refer to *Figure 17*.

NOTE: Lockwasher must be between switch and control panel when installing switch. Refer to *Figure 17*.

- (4) Disconnect wires from switch.

NOTE: Refer to appropriate wiring diagram when rewiring switch.

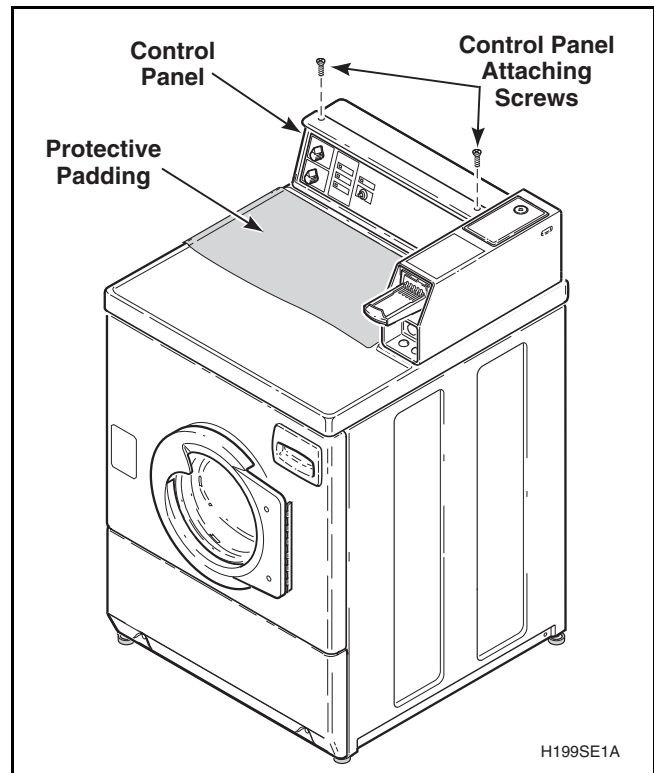


Figure 15

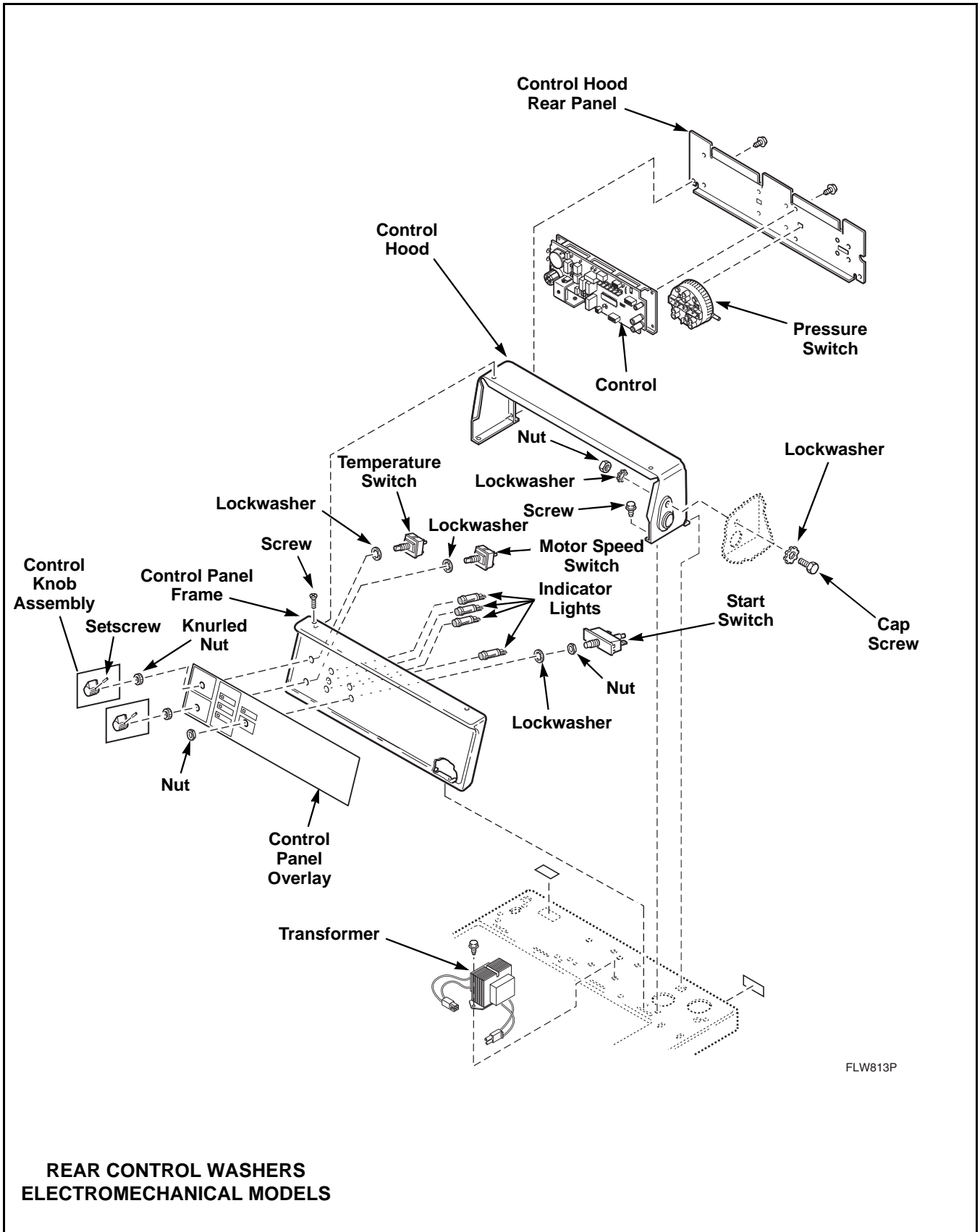


Figure 16



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.
- Motor not grounded! Disconnect electric power before servicing motor.

W485

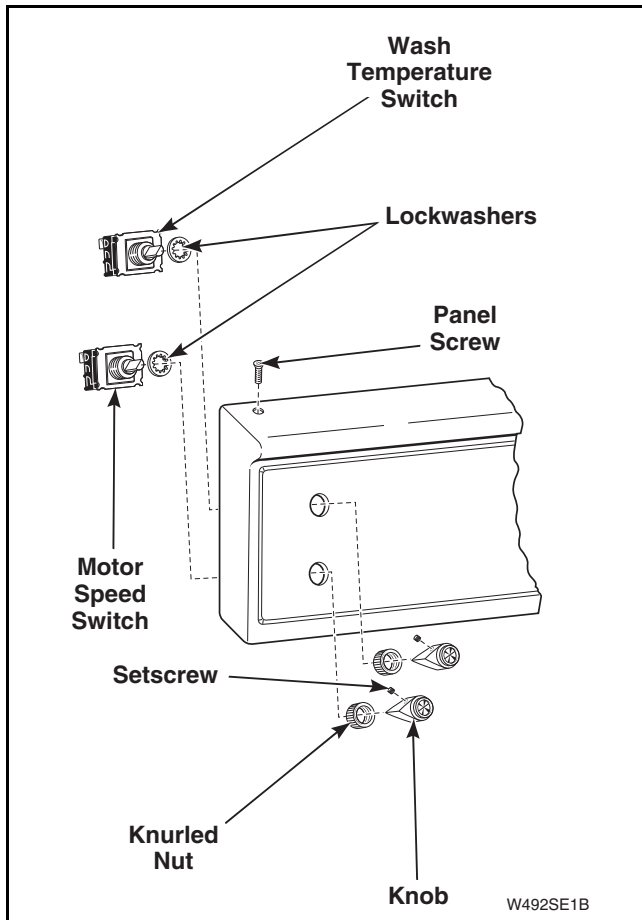


Figure 17

Electronic Control Models

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.

- Remove two control panel attaching screws. Refer to *Figure 15*. Lay assembly forward on protective pad on cabinet top.
- 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.

- Remove ground clip holding ground wire to control panel.

NOTE: Refer to wiring diagram when reconnecting wires.

i. Indicator Lights (In Use, Rinse or Spin

Refer to *Figure 16*)

- (1) Remove two control panel attaching screws. Refer to *Figure 15*. Lay assembly forward on protective pad on cabinet top.
- (2) Disconnect wires from light.

NOTE: Refer to wiring diagram when rewiring light.

- (3) Squeeze locking tabs together and pull light out rear of control panel.



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.
- Motor not grounded! Disconnect electric power before servicing motor.

W485

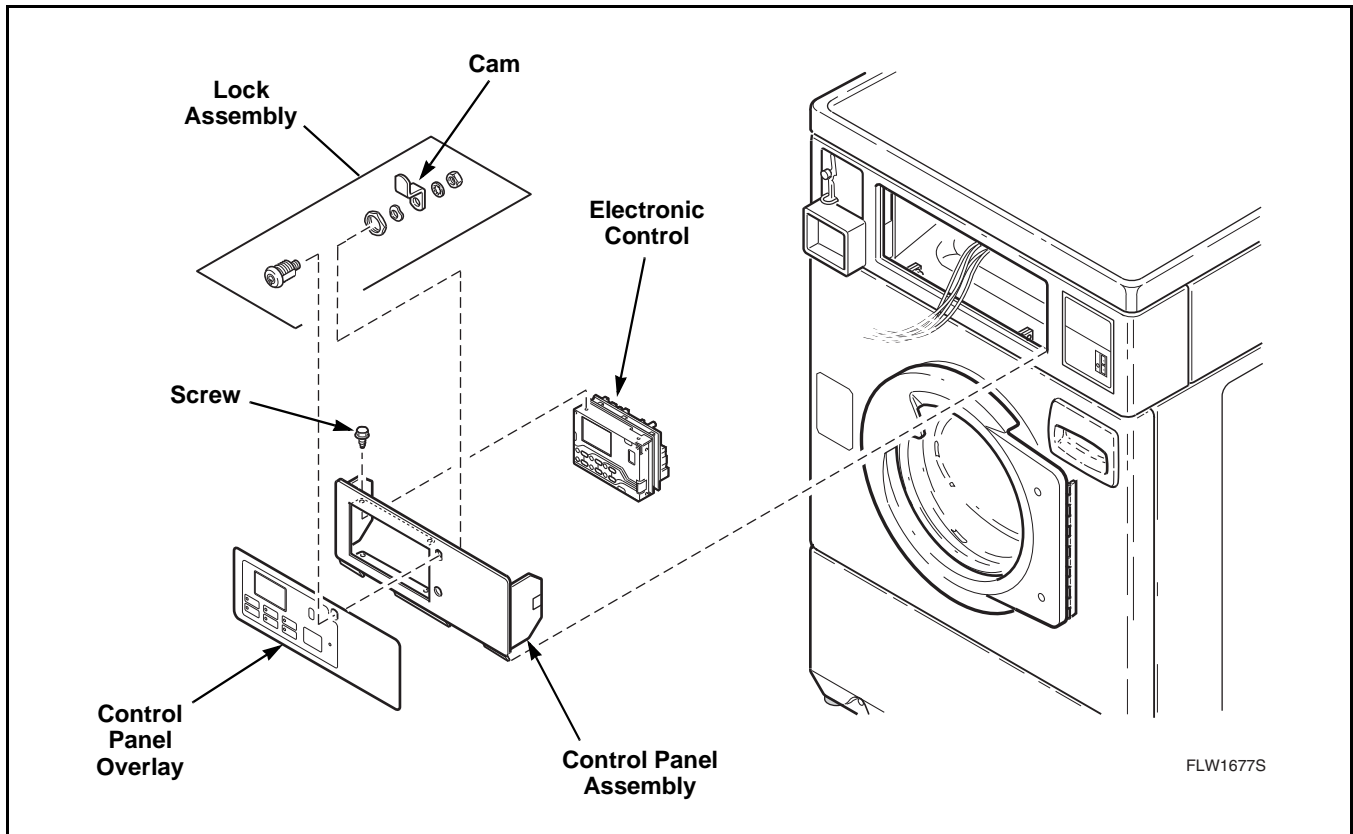


Figure 18

29. ELECTRONIC CONTROL Front Control Washers

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.

- Unlock control panel. Refer to *Figure 14, 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 14, Step 2*.
- Remove control panel away from control cabinet as far as wires permit. Refer to *Figure 14, Step 3*.
- While supporting control panel, press in on locking tabs and unplug harness disconnect blocks from backside of electronic control.



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.
- Motor not grounded! Disconnect electric power before servicing motor.

W485

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.

Rear Control Washers

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. Remove two control panel attaching screws. Refer to *Figure 15*. Lay control panel assembly face down on protective padding.
- b. Press in on locking tabs and unplug harness disconnect blocks from backside of electronic control assembly.

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

- c. Remove four screws holding electronic control assembly to backside of control panel. Refer to *Figure 19* or *20*.
- d. Place the old control in the anti-static wrapping that the new control was supplied in.
- e. While holding new control by its metal edges, place control in opening of control panel and fasten control down with four screws. Refer to *Figure 19* or *20*.

NOTE: For proper control alignment, tighten the top two screws first then tighten the bottom screws. *Figure 19* or *20*.

- f. 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.

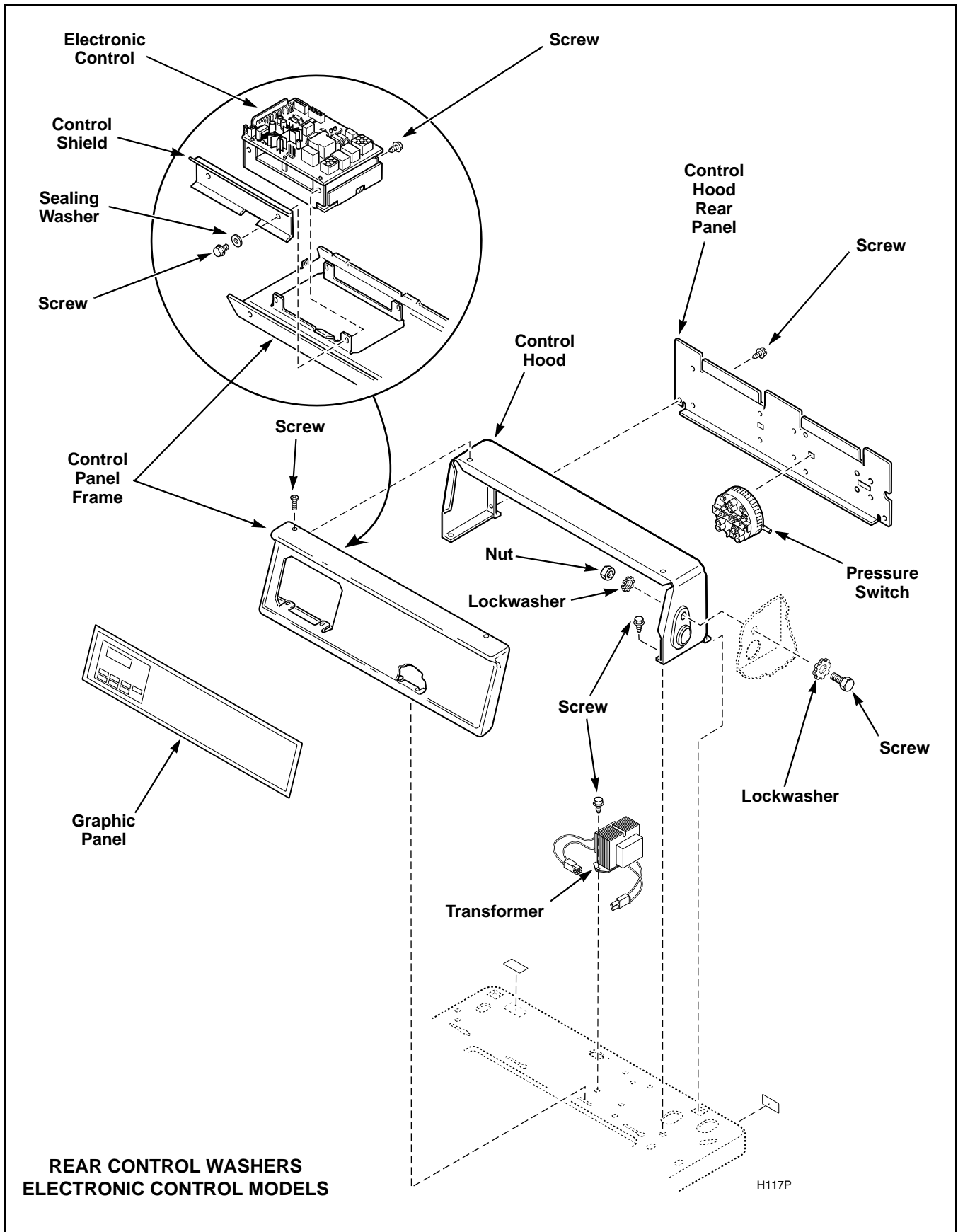


Figure 19



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.
- Motor not grounded! Disconnect electric power before servicing motor.

W485

30. CONTROL PANEL OVERLAY Front Control Washers

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 14, 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 14, Step 2*.
- (3) Remove control panel away from control cabinet as far as wires permit. Refer to *Figure 14, Step 3*.
- (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.

Rear Control Washers (Electromechanical Models)

a. Removal:

- (1) Remove two control panel attaching screws. Refer to *Figure 15*. Lay control panel on protective pad.
- (2) While supporting control panel, disconnect all wires from control panel components.

NOTE: Refer to wiring diagram when rewiring components.

- (3) Remove all components from control panel.
- (4) Using a hair dryer or heat gun to warm the overlay, remove control panel overlay by peeling it from the control panel assembly.

NOTE: Control panel overlay has an adhesive backing.



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.
- Motor not grounded! Disconnect electric power before servicing motor.

W485

b. Installation:

NOTE: Before removing protective backing from new overlay, check fit of overlay to control panel assembly. Refer to *Figure 16*.

- (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 frame.
- (3) Reinstall all components into control panel.
- (4) Following wiring diagram and reconnect wires to components.
- (5) Reinstall control panel.

Rear Control Washers (Electronic Control Models)

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) Remove control panel attaching screws. Refer to *Figure 15*. Lay assembly forward on protective pad on cabinet top. Refer to *Figure 15*.
- (2) Support control panel, press in on locking tabs and unplug harness disconnect blocks from backside of electronic control.

- (3) Using a hair dryer or heat gun to warm the overlay, remove control panel overlay by peeling it from the control panel frame.

NOTE: Control panel overlay has an adhesive backing.

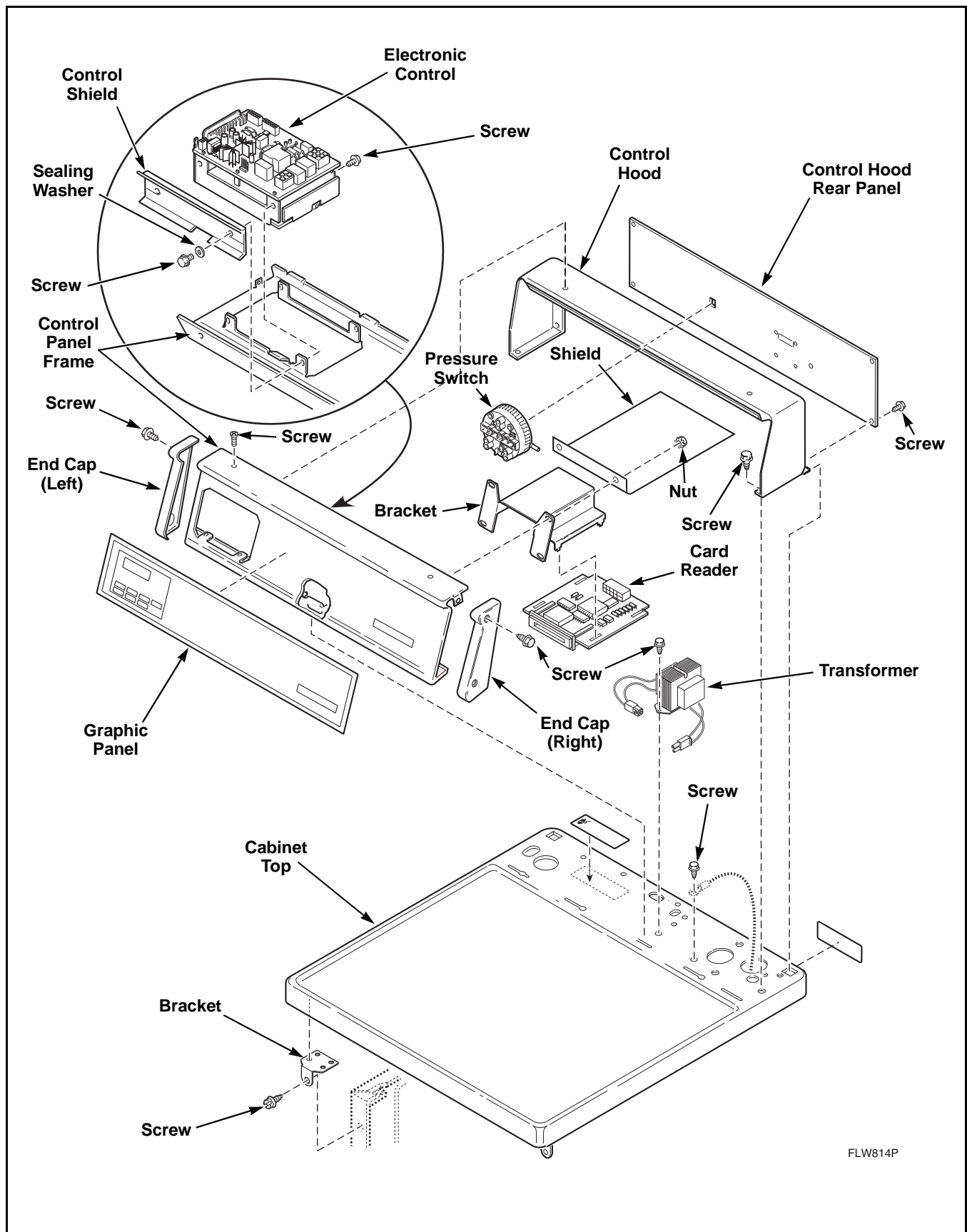
b. Installation:

NOTE: Before removing protective backing from new overlay, check fit of overlay to control panel frame. Electronic control opening is 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 19*.

NOTE: For proper control alignment, tighten the top two screws first then tighten the bottom screws. Refer to *Figure 19*.

- (4) Follow wiring diagram and reconnect wires to control.
- (5) Reinstall control panel.



FLW814P

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.
- Motor not grounded! Disconnect electric power before servicing motor.

W485

31. CABINET TOP

Front Control Washers

- Unlock control panel. Refer to *Figure 14, 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 14, Step 2*.
- Remove control panel away from control cabinet as far as wires permit. Refer to *Figure 14, Step 3*.
- Remove two screws holding front of cabinet top to top front edge of control cabinet front. Refer to *Figure 21*.
- 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 22*.

- Remove cabinet top from washer by removing nuts and carriage bolts holding cabinet top and hinges to control cabinet. Refer to *Figure 23*.
- Carefully lift cabinet top off washer and set out of the way to prevent damage.

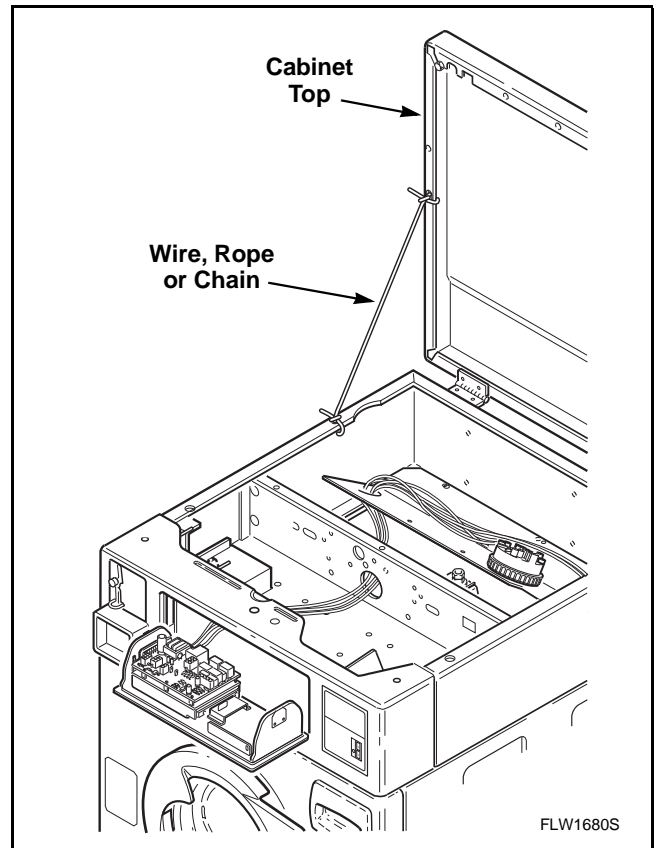


Figure 22

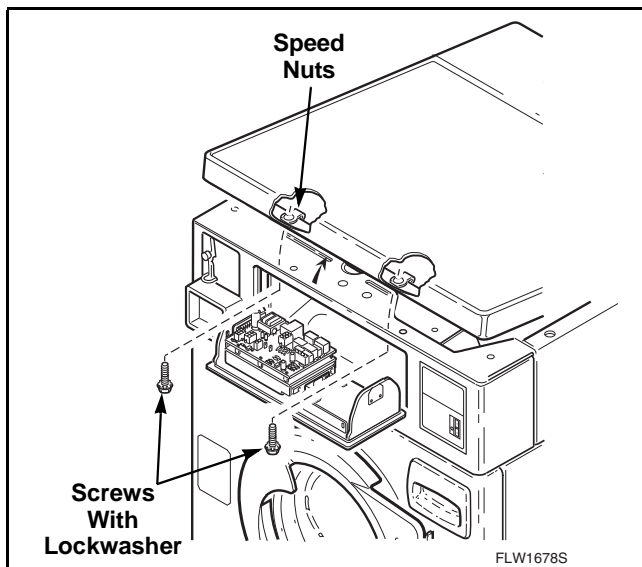


Figure 21

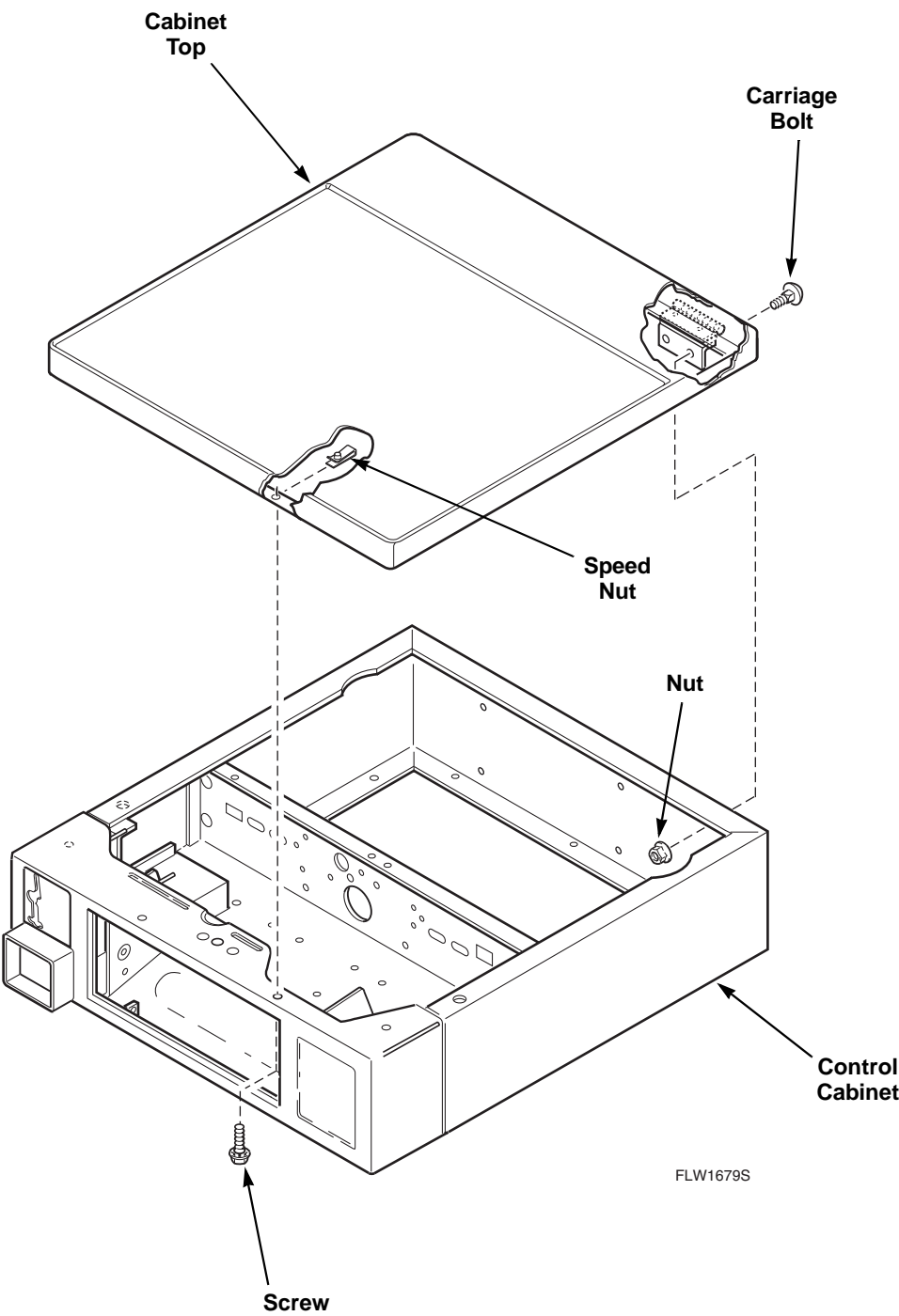


Figure 23



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.
- Motor not grounded! Disconnect electric power before servicing motor.

W485

Rear Control Washers

- While supporting lower access panel, remove two screws from bottom edge of panel and remove panel. Refer to *Figure 24*.

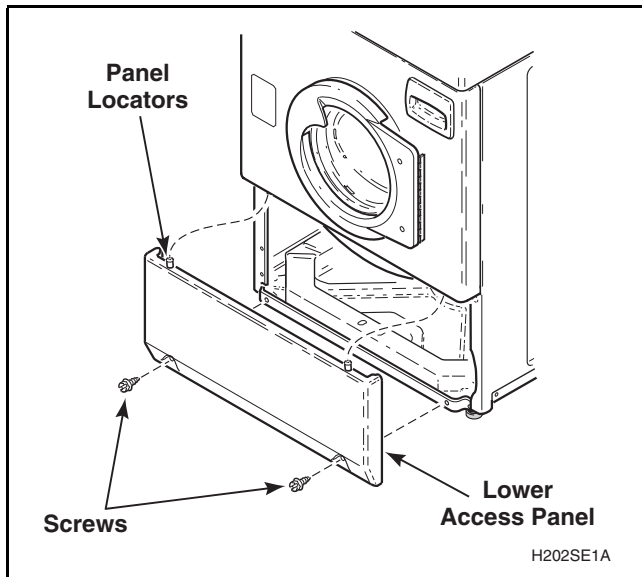


Figure 24

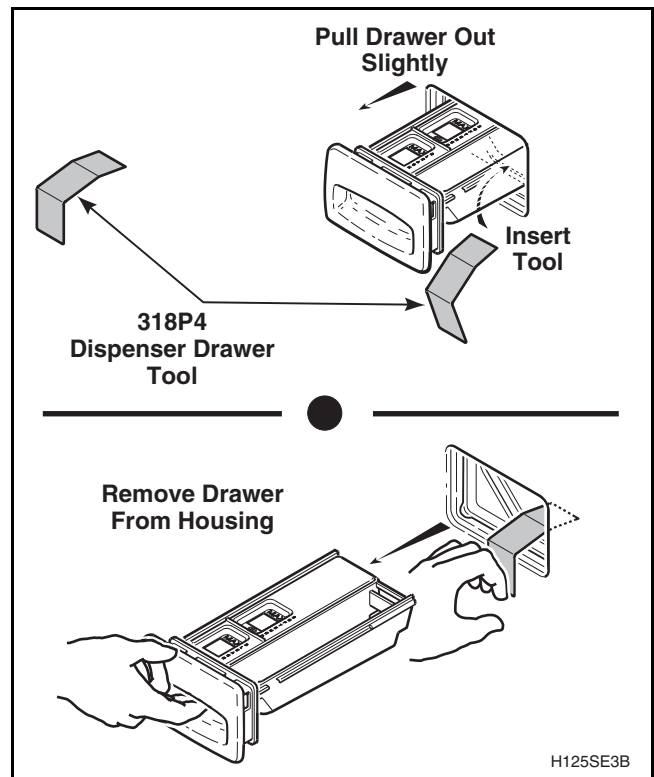


Figure 25

- Using the special tool, No. 318P4, remove dispenser drawer. Refer to *Figure 25*.
- Open loading door. Carefully remove wire clamp ring from groove with small flat blade screwdriver. Spring is in 6 o'clock position. Refer to *Figure 26*.
- Grasp loading door seal and slide seal away from front panel around the circumference of the door.
- Remove bottom two front panel attaching screws. Refer to *Figure 28*.
- 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 28*. Remove clips holding wire harness and door seal hose along top flange of front panel and remove front panel.

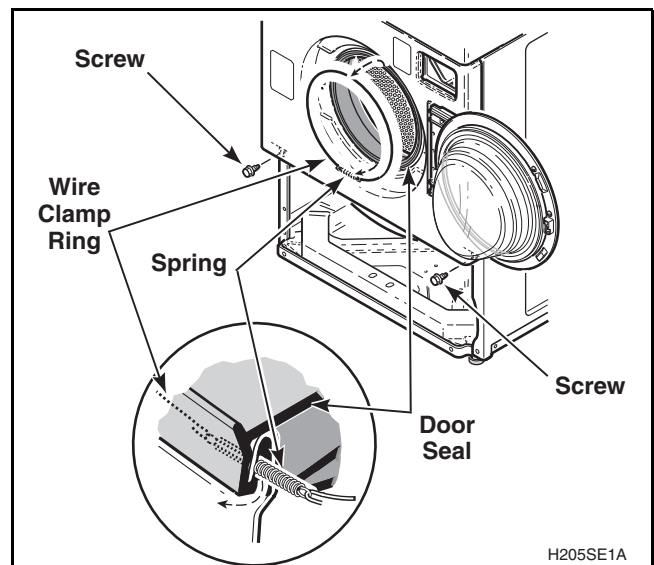


Figure 26



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.
- Motor not grounded! Disconnect electric power before servicing motor.

W485

- Remove two control panel attaching screws. Refer to *Figure 15*. Lay assembly forward on protective pad on cabinet top.
- Disconnect pressure hose from pressure switch.

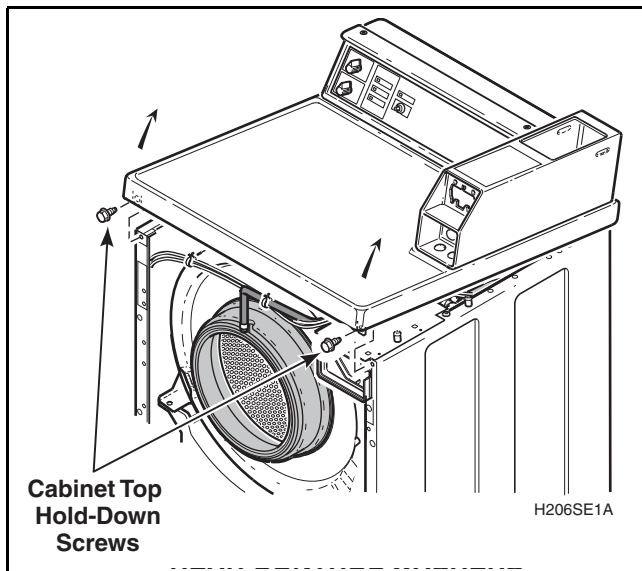


Figure 27

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

- Push base wire harness block and pressure hose down through hole in cabinet top.
- Reinstall control panel and screws.
- Unlock and remove meter case service door.
- Remove shoulder screw from inside meter case.
- Remove security bolt (if present) from left rear corner of cabinet top.
- Remove two screws holding front of cabinet top to front flange of side panels. Refer to *Figure 27*.

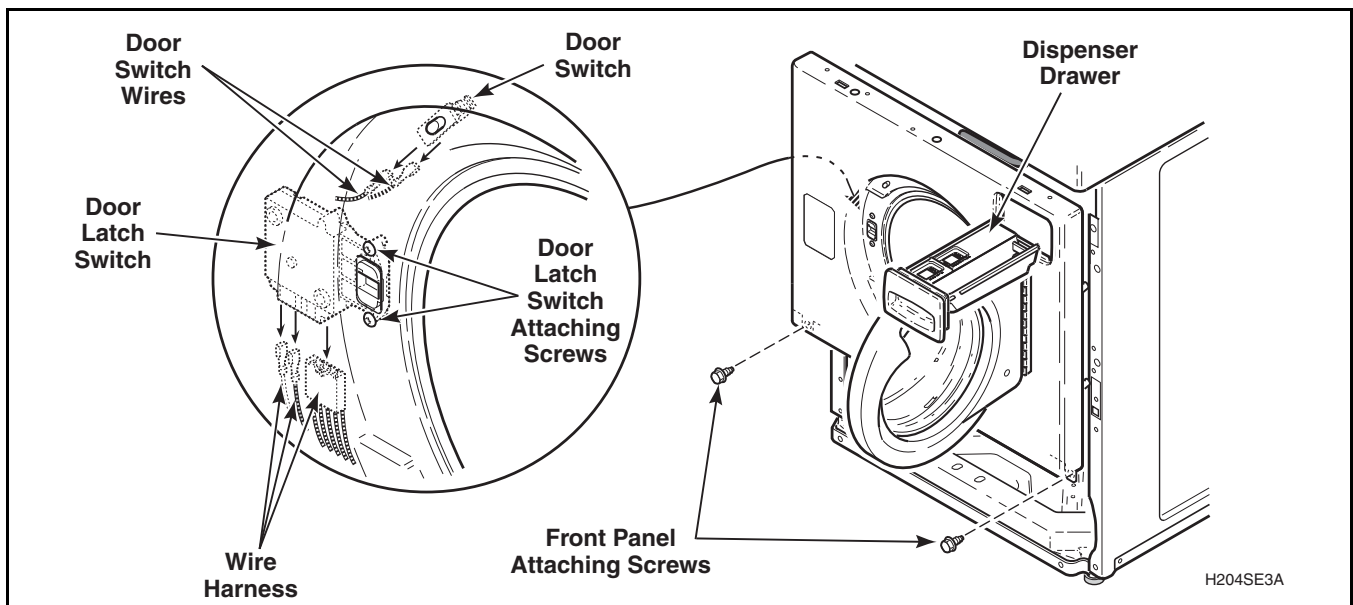


Figure 28

**WARNING**

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

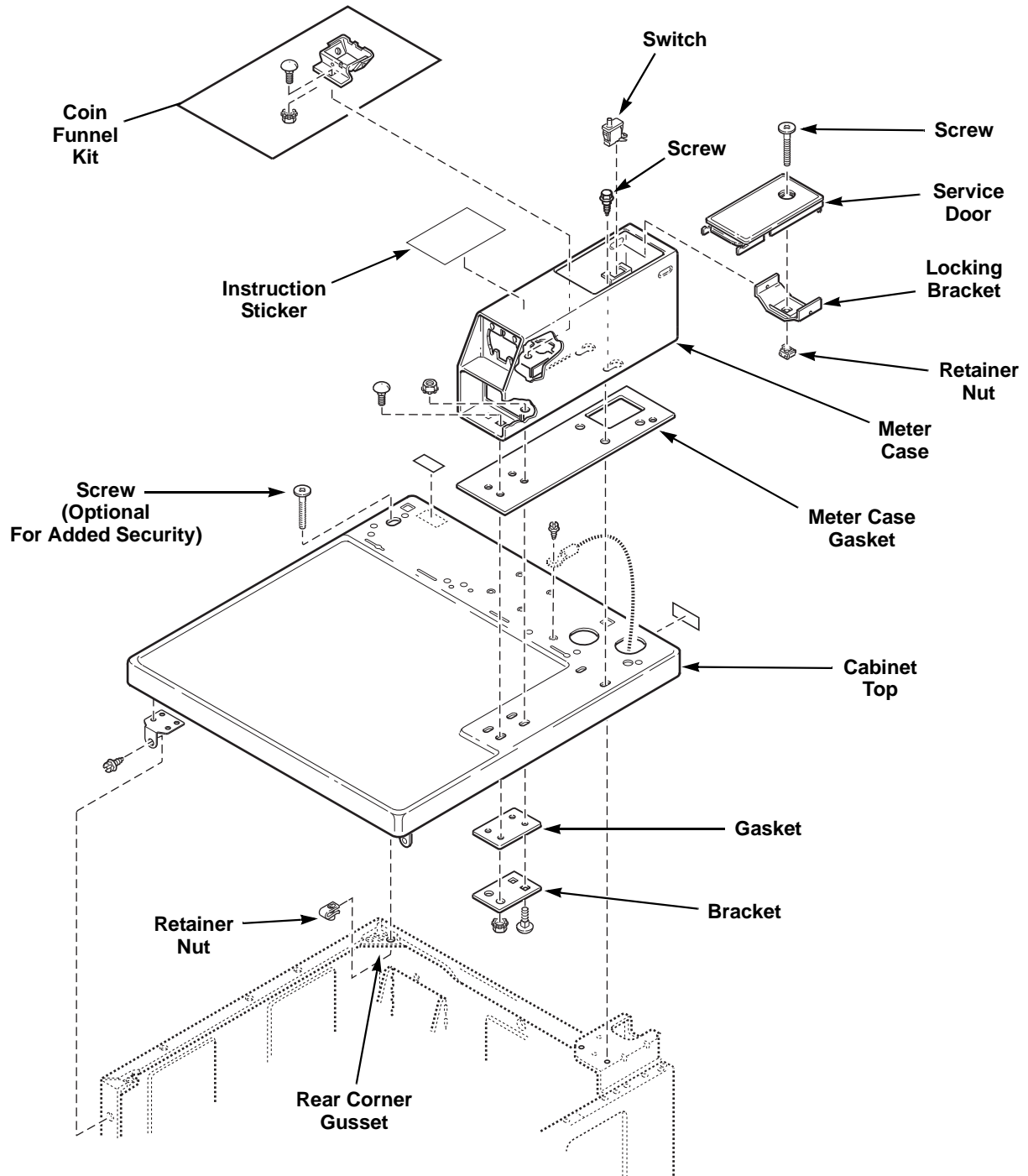
- Disconnect electric power to the washer before servicing.
- Never start the washer with any guards/panels removed.
- Whenever ground wires are removed during servicing, these ground wires must be reconnected to ensure that the washer is properly grounded.
- Motor not grounded! Disconnect electric power before servicing motor.

W485

- p. Lift front of cabinet top slightly and pull forward to disengage from rear hinges.
- q. Pull top forward far enough to permit disconnecting ground wires from top rear corner gusset of washer cabinet. Refer to *Figure 29*.
- r. Disconnect wires from mixing valve solenoids at rear of washer.

NOTE: Refer to appropriate wiring diagram when rewiring mixing valve solenoids.

- s. Carefully lift cabinet top off washer and set on protective padding.



FLW812P

REAR CONTROL WASHERS

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.
- Motor not grounded! Disconnect electric power before servicing motor.

W485

32. PRESSURE SWITCH

a. Front Control Washers –

- (1) Unlock control panel. Refer to *Figure 14, 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 14, Step 2*.
- (3) Remove control panel away from control cabinet as far as wires permit. Refer to *Figure 14, Step 3*.
- (4) Remove two screws holding front of cabinet top to top front edge of control cabinet front. Refer to *Figure 21*.
- (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 22*.

Rear Control Washers –

- (1) Remove two control panel attaching screws. Refer to *Figure 15*. Lay assembly forward on protective pad on cabinet top.
- b. Disconnect wires from pressure switch at disconnect block.

NOTE: Refer to appropriate wiring diagram when rewiring pressure switch.

- c. 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.

- d. Squeeze in locking tabs on pressure switch and remove switch. Refer to *Figure 30*.

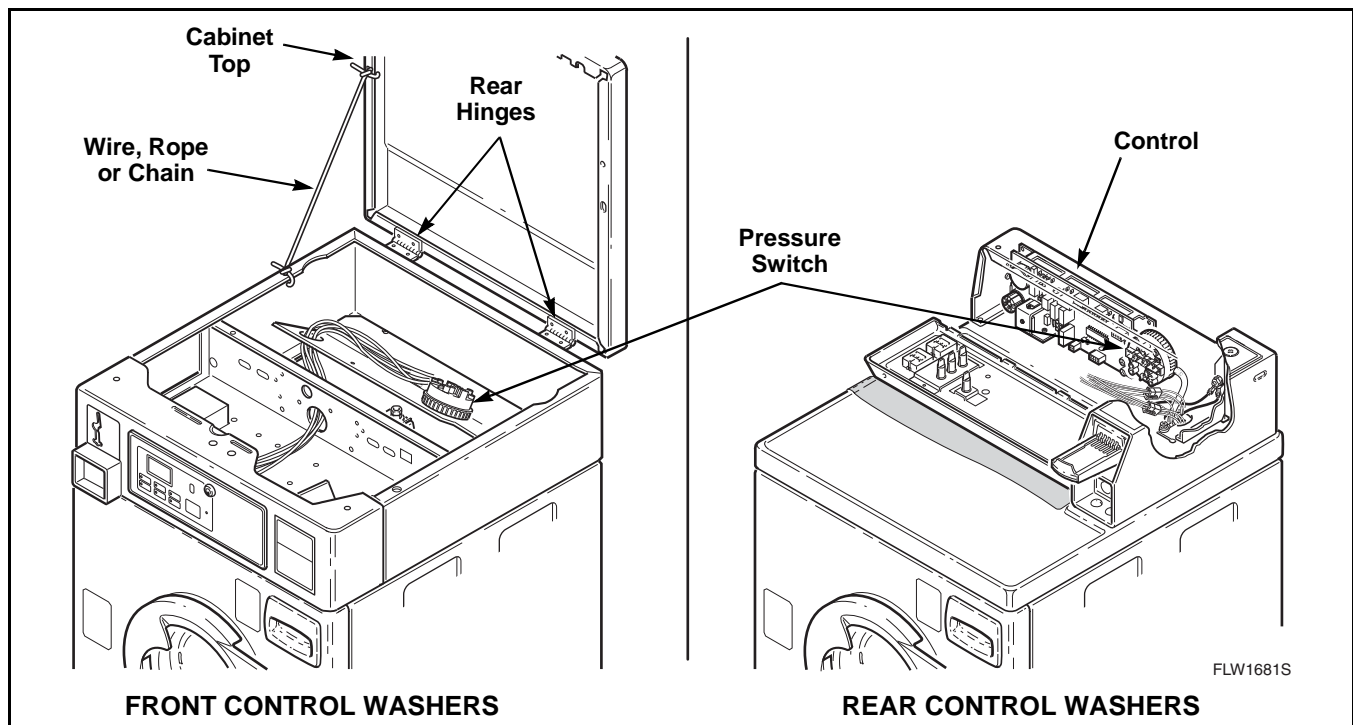


Figure 30



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.
- Motor not grounded! Disconnect electric power before servicing motor.

W485

33. CONTROL CABINET FRONT (Front Control Washers)

- a. Unlock control panel. Refer to *Figure 14*, 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 14*, Step “2”.
- c. Remove control panel away from control cabinet as far as wires permit. Refer to *Figure 14*, Step “3”.
- d. Remove two screws holding front of cabinet to top front edge of control cabinet front. Refer to *Figure 21*.
- 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 22*.

- f. Remove two screws holding bottom front flange of control cabinet front to top flange of washer front panel. Refer to *Figure 31*.
- g. Remove three screws (per side) holding control cabinet front to front flange of control cabinet wrapper. Refer to *Figure 31*.
- h. Remove two screws holding control cabinet wrapper tabs to control cabinet front tabs. Refer to *Figure 31*.
- i. Carefully pull control cabinet front straight out and away from control cabinet wrapper. Refer to *Figure 31*.

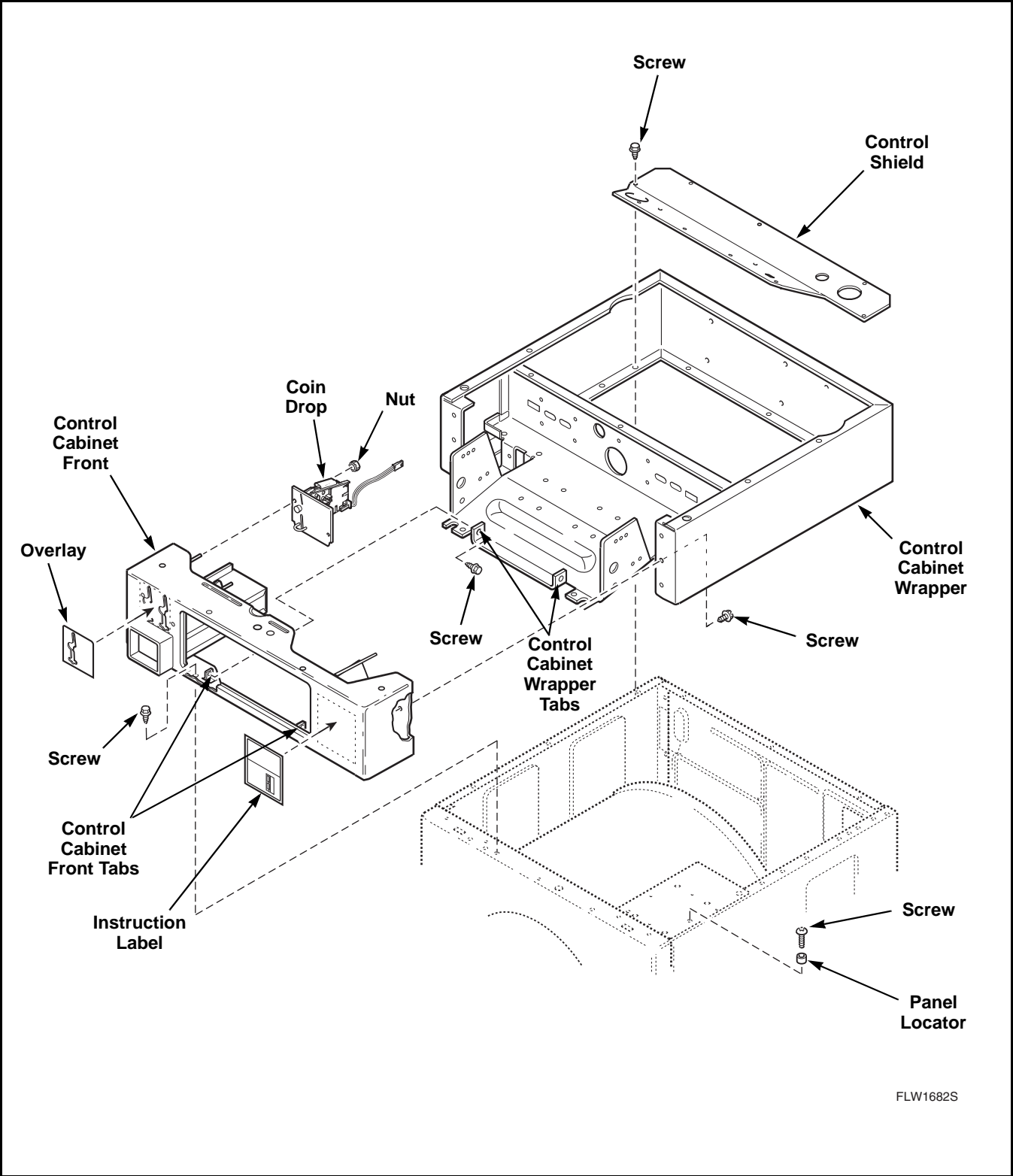


Figure 31



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.
- Motor not grounded! Disconnect electric power before servicing motor.

W485

34. COIN DROP

Front Control Washers

a. Removal:

- (1) Unlock control panel. Refer to *Figure 14, 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 14, Step "2"*.
- (3) Remove control panel away from control cabinet as far as wires permit. Refer to *Figure 14, Step "3"*.
- (4) Remove two screws holding front of cabinet top to top front edge of control cabinet front. Refer to *Figure 21*.
- (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 22*.

- (6) Disconnect coin drop harness at disconnect block.
- (7) Use a 3/8 inch square drive socket, with number 310P4—quarter inch Ratchet Extension Tool, to remove two 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 32*.

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

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 two 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) 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 21*.
- (7) Reinstall control panel in control cabinet and lock control panel.

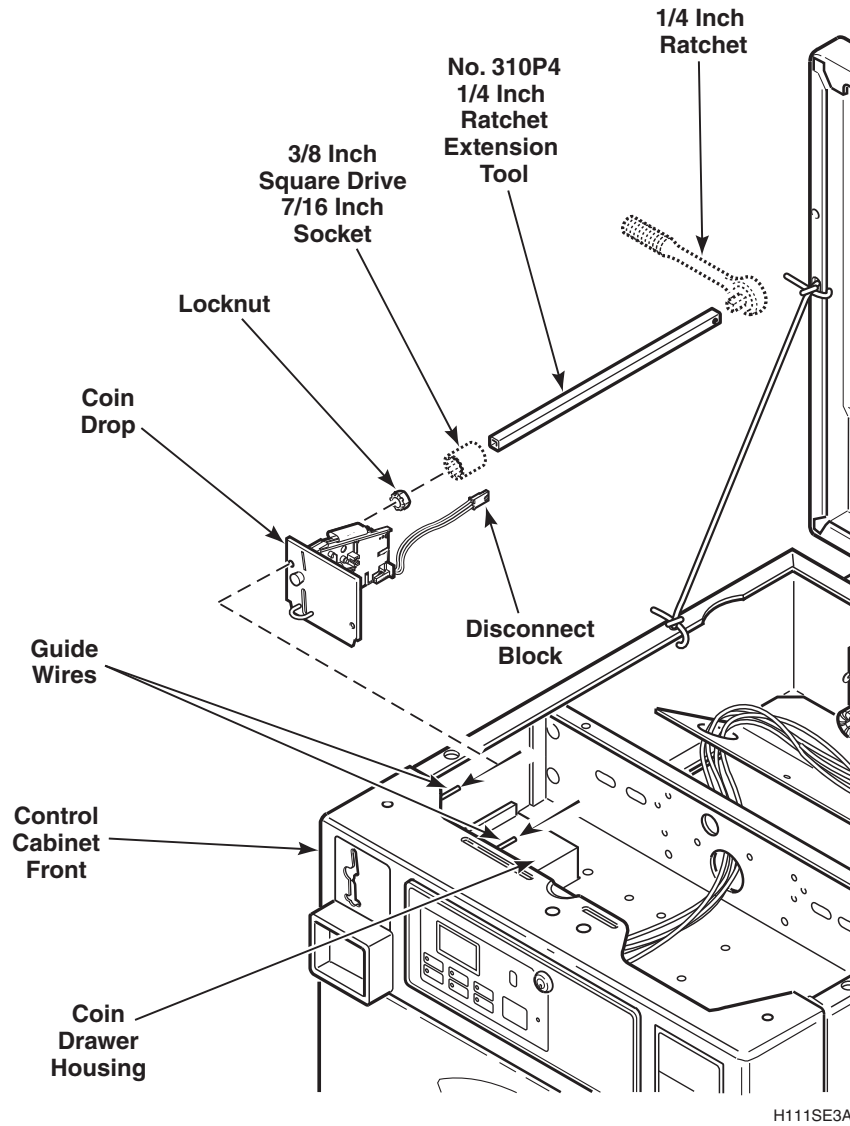


Figure 32



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.
- Motor not grounded! Disconnect electric power before servicing motor.

W485

Rear Control Washers

a. Removal:

- (1) Unlock and open service door.

NOTE: If screw type lock is used, the retainer bracket must be removed from inside meter case.

- (2) Disconnect wire harness from coin drawer switch and disconnect coin drop at disconnect plugs.
- (3) Press in on locking tabs of service door switch and remove switch from bracket on meter case, as shown in *Figure 33*.

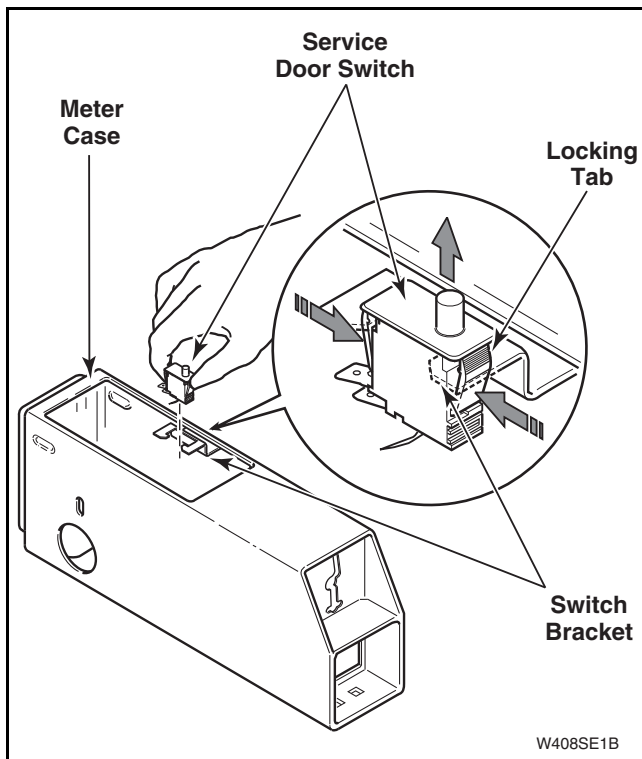


Figure 33

- (4) Use a 7/16 inch socket with No. 310P4 1/4 inch Ratchet Extension Tool and remove two locknuts holding coin drop to front of meter case. Refer to *Figure 34*.
 - (5) Lift back end of coin drop and pull straight back until bottom edge of drop's front face plate falls behind the coin drawer housing.
 - (6) Carefully lift complete coin drop straight up and out of meter case.
- #### b. Installation:
- (1) Reverse removal procedures for installation.

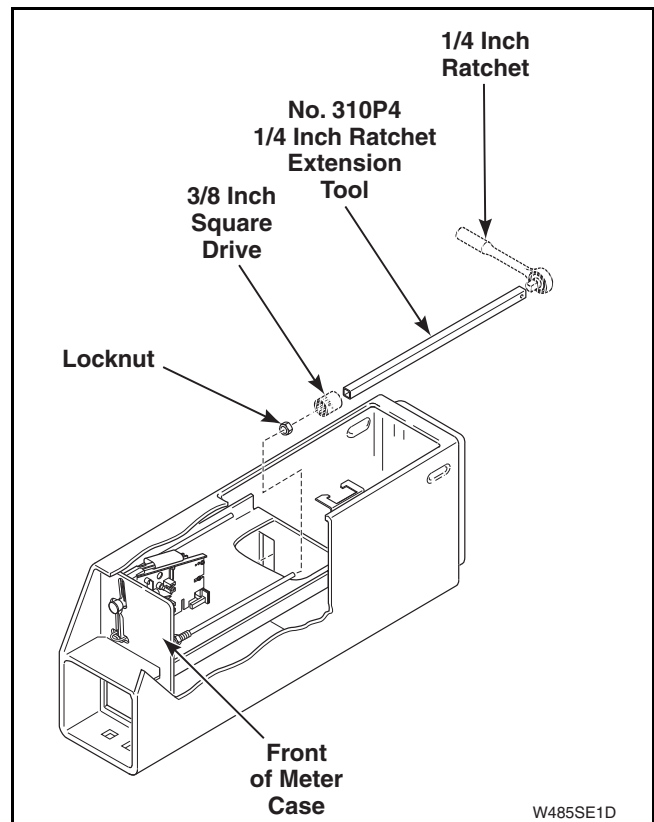


Figure 34



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.
- Motor not grounded! Disconnect electric power before servicing motor.

W485

35. CARD READER

Front Control Washers

a. Removal:

- (1) Unlock control panel. Refer to *Figure 14, 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 14, Step 2*.
- (3) Remove control panel away from control cabinet as far as wires permit. Refer to *Figure 14, Step 3*.
- (4) Remove two screws holding front of cabinet top to top front edge of control cabinet front. Refer to *Figure 21*.
- (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 22*.

- (6) Disconnect card reader harness at disconnect block.
- (7) 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 35*.

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 35*.

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 35*. Then tighten screws or nuts firmly.
- (3) Reconnect card reader harness.
- (4) Lower cabinet top into position and reinstall two screws (previously removed) holding cabinet top to top front edge of control cabinet front. Refer to *Figure 21*.
- (5) Reinstall control panel in control cabinet and lock control panel.

Rear Control Washers

- a. Remove two control panel attaching screws. Refer to *Figure 15*. Lay control panel assembly forward on protective pad on cabinet top.
- b. Disconnect card reader harness.
- c. Remove four nuts holding card reader bracket to control panel. Refer to *Figure 20*.
- d. Remove card reader assembly.
- e. Disengage card reader.

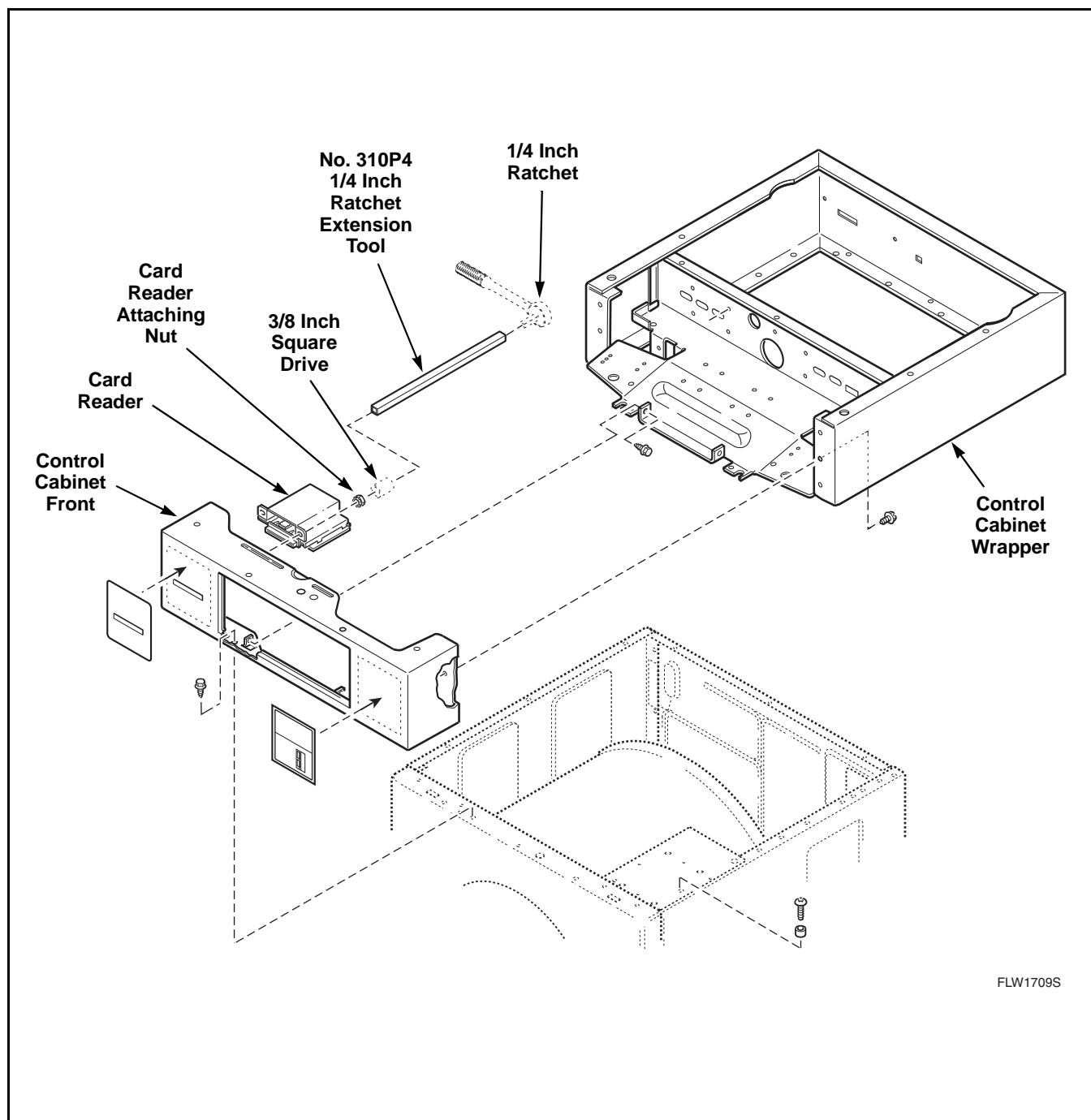


Figure 35



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.
- Motor not grounded! Disconnect electric power before servicing motor.

W485

36. CONTROL CABINET WRAPPER (Front Control Washers)

- a. Unlock control panel. Refer to *Figure 14*, 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 14*, Step “2”.
- c. Remove control panel away from control cabinet as far as wires permit. Refer to *Figure 14*, Step “3”.
- d. Remove two screws holding front of cabinet top to top front edge of control cabinet front. Refer to *Figure 21*.
- 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 22*.

- f. Remove cabinet top from washer by removing nuts and carriage bolts holding cabinet top and hinges to control cabinet. Refer to *Figure 23*.
- g. Carefully lift cabinet top off washer and set out of the way to prevent damage.
- h. Remove screws holding control shield (with controls attached) to bottom rear flange of control cabinet wrapper.
- i. Remove screws holding control cabinet wrapper to top flange of side panels. Refer to *Figure 31*.
- j. Carefully lift control cabinet assembly off washer and set out of the way.

37. LOWER ACCESS PANEL

- a. While supporting the lower access panel, remove two screws from bottom edge of lower access panel. Refer to *Figure 36*.
- b. Gently lower the access panel to disengage panel locators from bottom edge of front panel.

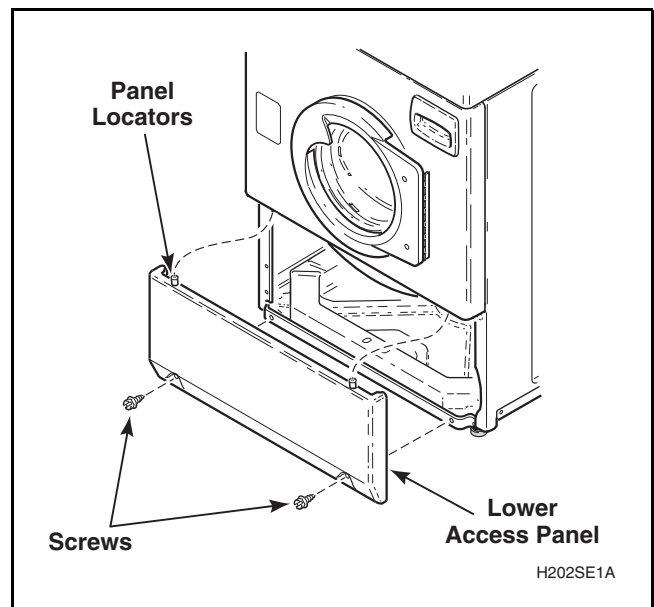


Figure 36



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.
- Motor not grounded! Disconnect electric power before servicing motor.

W485

38. INVERTER CONTROL

IMPORTANT: Due to the sensitivity of the inverter control, careful handling is required. As a precautionary measure, we recommend using a ground wrist strap when handling the inverter 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 inverter control will be minimized. Always handle inverter 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.

- While supporting the lower access panel, remove two screws from bottom edge of lower access panel. Refer to *Figure 36*.
- Gently lower the access panel to disengage panel locators from bottom edge of front panel.
- Remove screws holding plastic shield to control.
- Remove shield.
- Press in on locking tabs and unplug harness disconnect blocks and all wires from inverter control.

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

- Remove screws holding inverter control to base of washer. Refer to *Figure 37*.
- Place old control in the anti-static wrapping that new control was supplied in.

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

- Position the new inverter control on base of washer as shown in *Figure 37*. Reinstall screws (removed in Step “f”) and tighten firmly.
- Follow the wiring diagram and reconnect wires and harness disconnect blocks to new inverter control.
- Secure wires to base and motor using new wire ties. Refer to *Figure 37*.
- Reinstall plastic shield over new control.

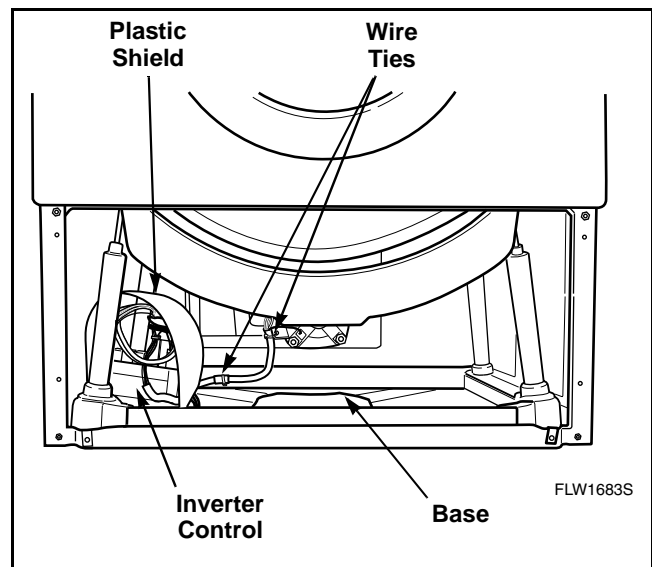


Figure 37



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.
- Motor not grounded! Disconnect electric power before servicing motor.

W485

39. ELECTRIC DRAIN PUMP

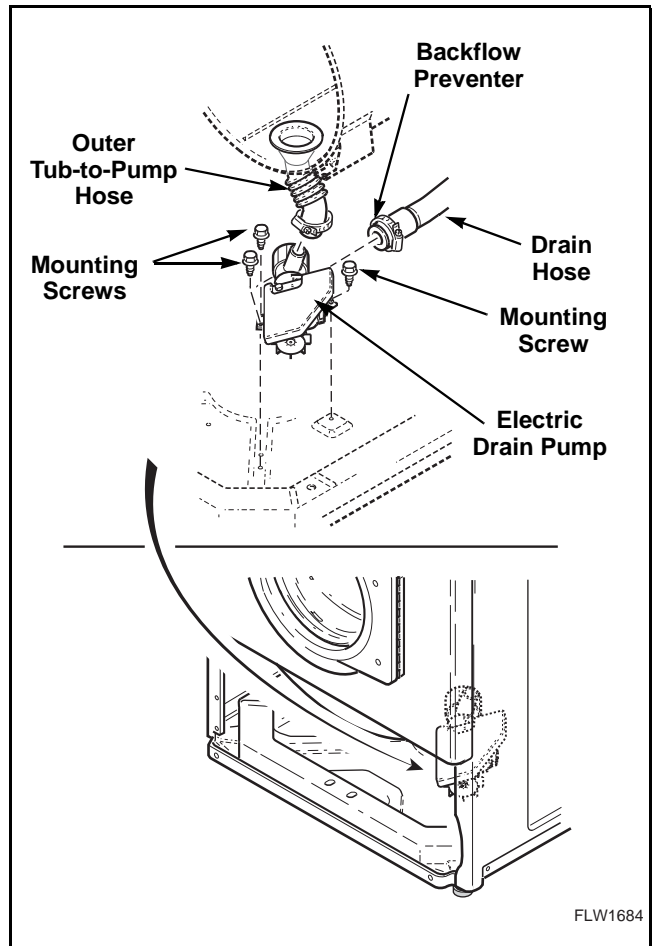
- While supporting the lower access panel, remove two screws from bottom edge of panel and remove panel. Refer to *Figure 36*.

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 38*.
- Disconnect wires from drain pump.

NOTE: Refer to wiring diagram when rewiring drain pump.

- Remove three mounting screws holding pump to base and remove pump out through front of washer. Refer to *Figure 38*.



FLW1684

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.
- Motor not grounded! Disconnect electric power before servicing motor.

W485

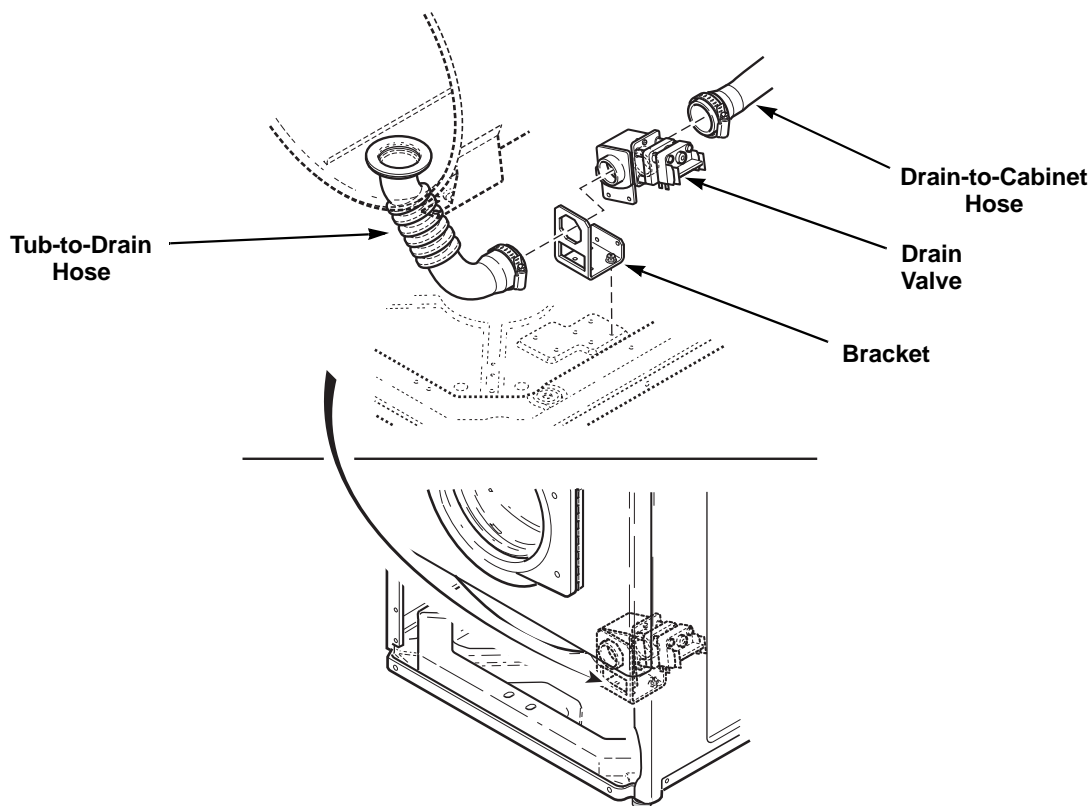
40. GRAVITY DRAIN VALVE

- While supporting the lower access panel, remove two screws from bottom edge of lower access panel. Refer to *Figure 36*.
- Gently lower access panel to disengage panel locators from bottom edge of front panel.
- Loosen hose clamps and remove tub-to-drain and drain-to-cabinet hoses connected to drain valve. Refer to *Figure 39*.

- Disconnect wires from drain valve.

NOTE: Refer to wiring diagram when rewiring drain pump.

- Remove screws holding valve to bracket and remove valve through front of washer. Refer to *Figure 39*.



FLW1685S

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.
- Motor not grounded! Disconnect electric power before servicing motor.

W485

41. BELT

- a. While supporting the lower access panel, remove two screws from bottom edge of panel and remove panel. Refer to *Figure 36*.
- b. **Front Control Washers –**
 - (1) Unlock control panel. Refer to *Figure 14*, 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 14*, Step “2”.
 - (3) Remove control panel away from control cabinet as far as wires permit. Refer to *Figure 14*, Step “3”.
 - (4) Remove two screws holding front of cabinet top to top front edge of control cabinet front. Refer to *Figure 23*.

Rear Control Washers –

- (1) Using the special tool, No. 318P4, remove dispenser drawer. Refer to *Figure 25*.
- (2) Open loading door. Carefully remove wire clamp ring from groove with small flat blade screwdriver. Spring is in the 6 o'clock position. Refer to *Figure 26*.

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

- (3) Grasp loading door seal lip. Refer to *Figure 40*, 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.

- (4) Using a circular motion, pull seal up (*Figure 40*, Step “1”), out (*Figure 40*, Step “2”), and down (*Figure 40*, Step “3”).
- (5) When seal releases from lip of front panel, pull out and remove the seal. Refer to *Figure 40*, Step “4”.

- (6) While supporting the front panel assembly, remove the two bottom front corner screws. Refer to *Figure 28*. Remove front panel (with loading door attached) away from washer as far as wire permits.
- (7) Unplug wire harness from both the door latch switch and from the door switch. Refer to *Figure 28*. Remove clips holding wire harness and door seal hose along top flange of front panel and remove front panel.
- (8) Unlock and remove meter case service door. Refer to *Figure 29*.
- (9) Remove shoulder screw from inside meter case.
- (10) Remove two screws holding cabinet top to front flange of each side panel. Refer to *Figure 27*.
- (11) Remove security bolt (if present) from left rear corner of cabinet top. Refer to *Figure 29*.
- c. 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.

- d. Run belt off cylinder pulley while slowly turning pulley. Refer to *Figure 41*.
- e. Remove belt from motor shaft.

NOTE: When installing belt, adjust belt tension as follows:

- f. Working through the front access door opening, place a locking pliers on the metal rod and loosen the two adjusting bolts. Repeat procedure to loosen the two pivot bolts. Refer to *Figure 41*.

Section 5 Service Procedures

- g. 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 41*.

- h. After proper belt tension has been obtained, tighten belt adjusting bolts firmly, then tighten pivot bolts. Refer to *Figure 41*.

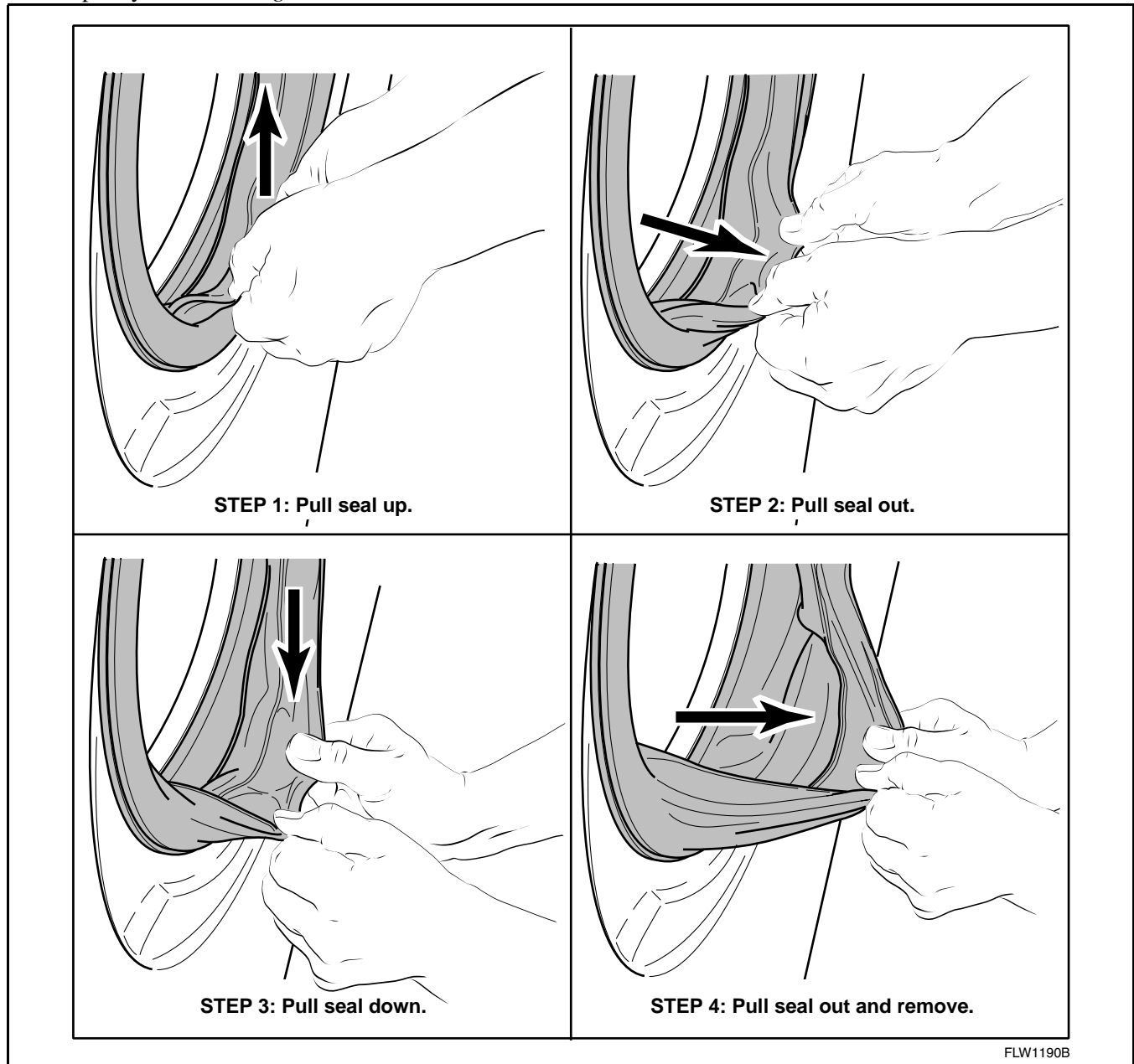


Figure 40

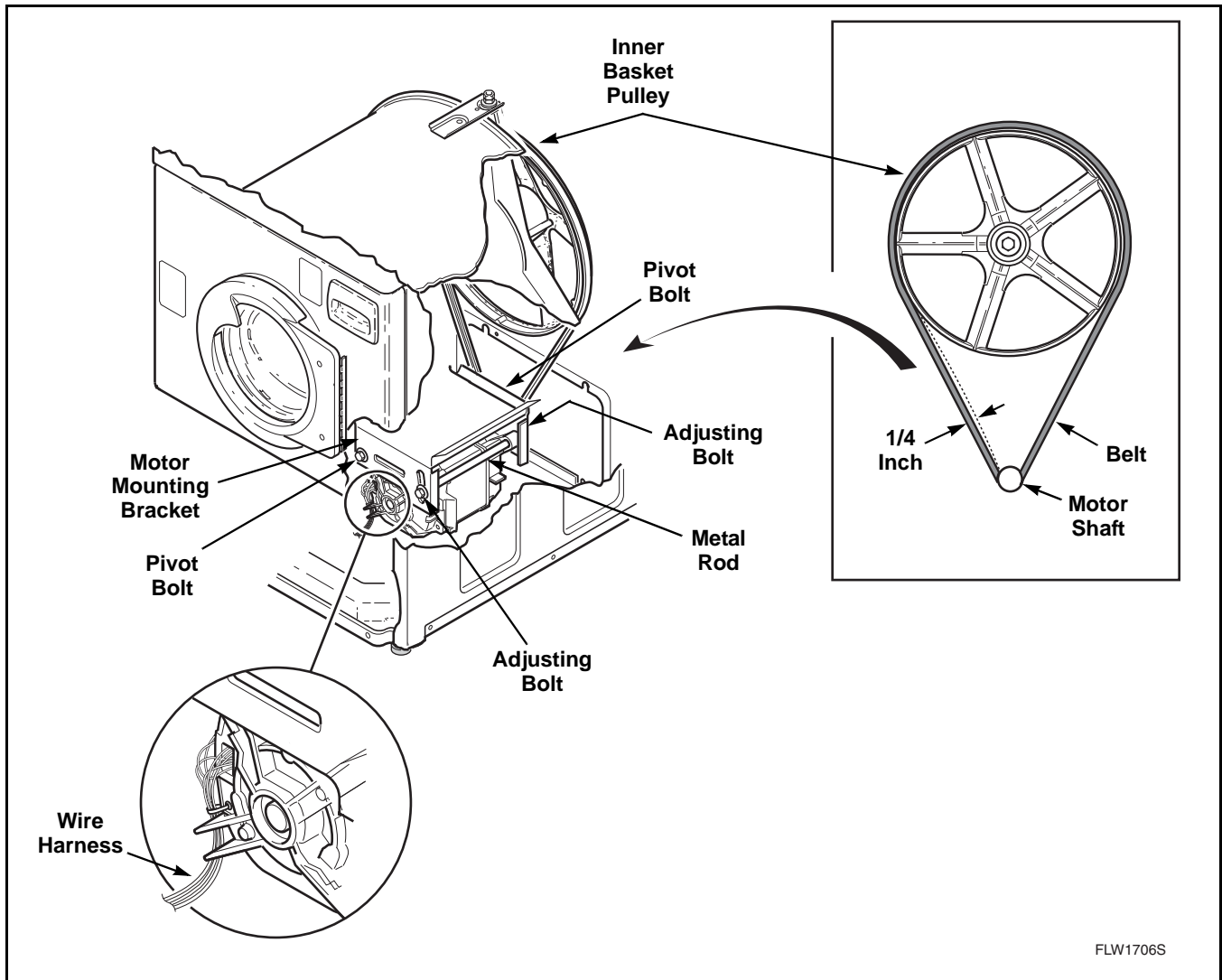


WARNING

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.
- Motor not grounded! Disconnect electric power before servicing motor.

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Figure 41

42. MIXING VALVE

a. Front Control Washers –

- (1) Unlock control panel. Refer to *Figure 14*, 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 14*, Step “2”.
- (3) Remove control panel away from control cabinet as far as wires permit. Refer to *Figure 14*, Step “3”.
- (4) Remove two screws holding front of cabinet top to top front edge of control cabinet front. 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.
- Motor not grounded! Disconnect electric power before servicing motor.

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Rear Control Washers –

- (1) While supporting lower front access panel, remove two screws from bottom edge of panel and remove panel. Refer to *Figure 24*.
- (2) Using the special tool, No. 318P4, remove dispenser drawer. Refer to *Figure 25*.
- (3) Open loading door. Carefully remove wire clamp ring from groove with small flat blade screwdriver. Spring is in the 6 o'clock position. Refer to *Figure 26*.

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

- (4) Grasp loading door seal lip. Refer to *Figure 40*, 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.

- (5) Using a circular motion, pull seal up (*Figure 40*, Step “1”), out (*Figure 40*, Step “2”), and down (*Figure 40*, Step “3”).
- (6) When seal releases from lip of front panel, pull out and remove the seal. Refer to *Figure 40*, Step “4”.
- (7) While supporting the front panel assembly, remove the two bottom front panel corner screws. Refer to *Figure 28*. Remove front panel (with loading door attached) away from washer as far as wire permits.
- (8) Unplug wire harness from both the door latch switch and from the door switch. Refer to *Figure 28*. Remove clips holding wire harness and door seal hose along top flange of front panel and remove front panel.

- (9) Unlock and remove meter case service door. Refer to *Figure 29*.
 - (10) Remove shoulder screw from inside meter case.
 - (11) Remove two screws holding cabinet top to front flange of side panel. Refer to *Figure 27*.
 - (12) Remove security bolt (if present) from left rear corner of cabinet top. Refer to *Figure 29*.
- b. If area or space permits, lift cabinet top to a vertical position by hinging it on the rear hinges. Refer to *Figure 22*.

NOTE: To avoid damage to hinges, be sure to support cabinet top with a small chain or something similar. Refer to *Figure 22*.

- c. Mixing valve is located on upper back right corner of rear panel. Refer to *Figure 42*.
- d. Shut off external hot and cold water supply and remove two inlet hoses.
- e. Loosen hose clamp and remove mixing valve-to-dispenser hose at the mixing valve. Refer to *Figure 42*.
- f. Remove wire harness disconnect blocks from mixing valve solenoid terminals. Refer to *Figure 42*.

NOTE: Refer to wiring diagram when rewiring solenoids.

- g. 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 42*.
- h. Remove screws holding valve to mixing valve plate. Refer to *Figure 42*.

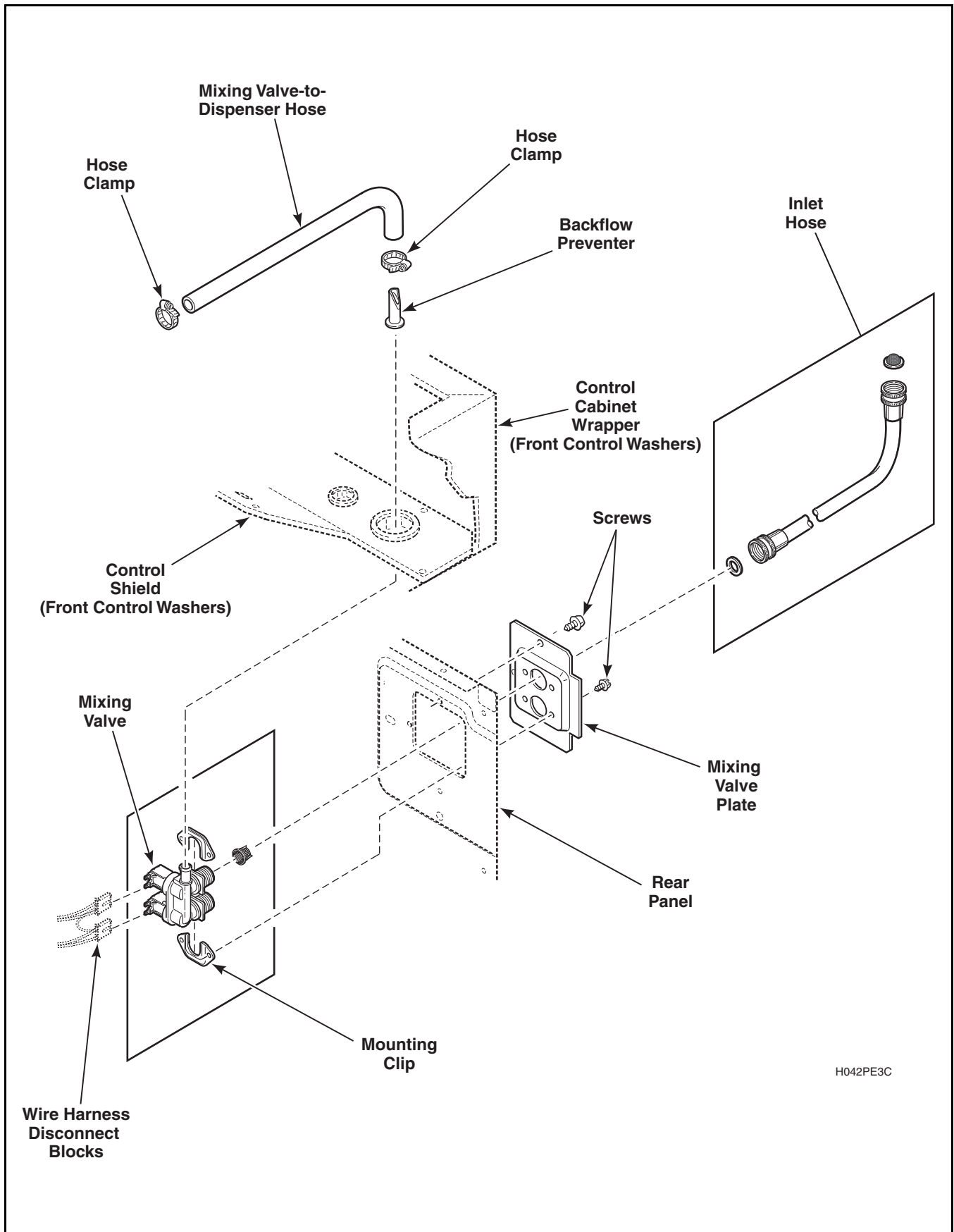


Figure 42



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.
- Motor not grounded! Disconnect electric power before servicing motor.

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43. FRONT PANEL

a. Front Control Washers –

- (1) Unlock control panel. Refer to *Figure 14*, 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 14*, Step “2”.
 - (3) Remove control panel away from control cabinet as far as wires permit. Refer to *Figure 14*, Step “3”.
 - (4) Working through control panel opening, remove two screws holding bottom flange of control cabinet front to top flange of front panel. Refer to *Figure 31*.
- b. While supporting lower access panel, Remove two screws from bottom edge of panel and remove panel. Refer to *Figure 24*.
- c. Using the special tool, No. 318P4, remove dispenser drawer. Refer to *Figure 25*.
- d. Remove bottom two front panel corner screws. Refer to *Figure 27*.
- e. Open loading door. Carefully remove wire clamp ring from groove with small flat blade screwdriver. Spring is in 6 o'clock position. Refer to *Figure 26*.

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

- f. Grasp loading door seal lip. Refer to *Figure 40*, 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.

- g. Using a circular motion, pull seal up (*Figure 40*, Step “1”), out (*Figure 40*, Step “2”), and down (*Figure 40*, Step “3”).
- h. When seal releases from lip of front panel, pull out and remove the seal. Refer to *Figure 40*, Step “4”.

NOTE: The ease of installation of the loading door can be improved using water or soapy solution to work seal around circumference of loading door. Be sure to install 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.

- i. Remove front panel (with loading door attached) away from washer as far as wires permit.
- j. Unplug wire harness from both the door latch switch and from the door switch. Refer to *Figure 43*. 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 43*.

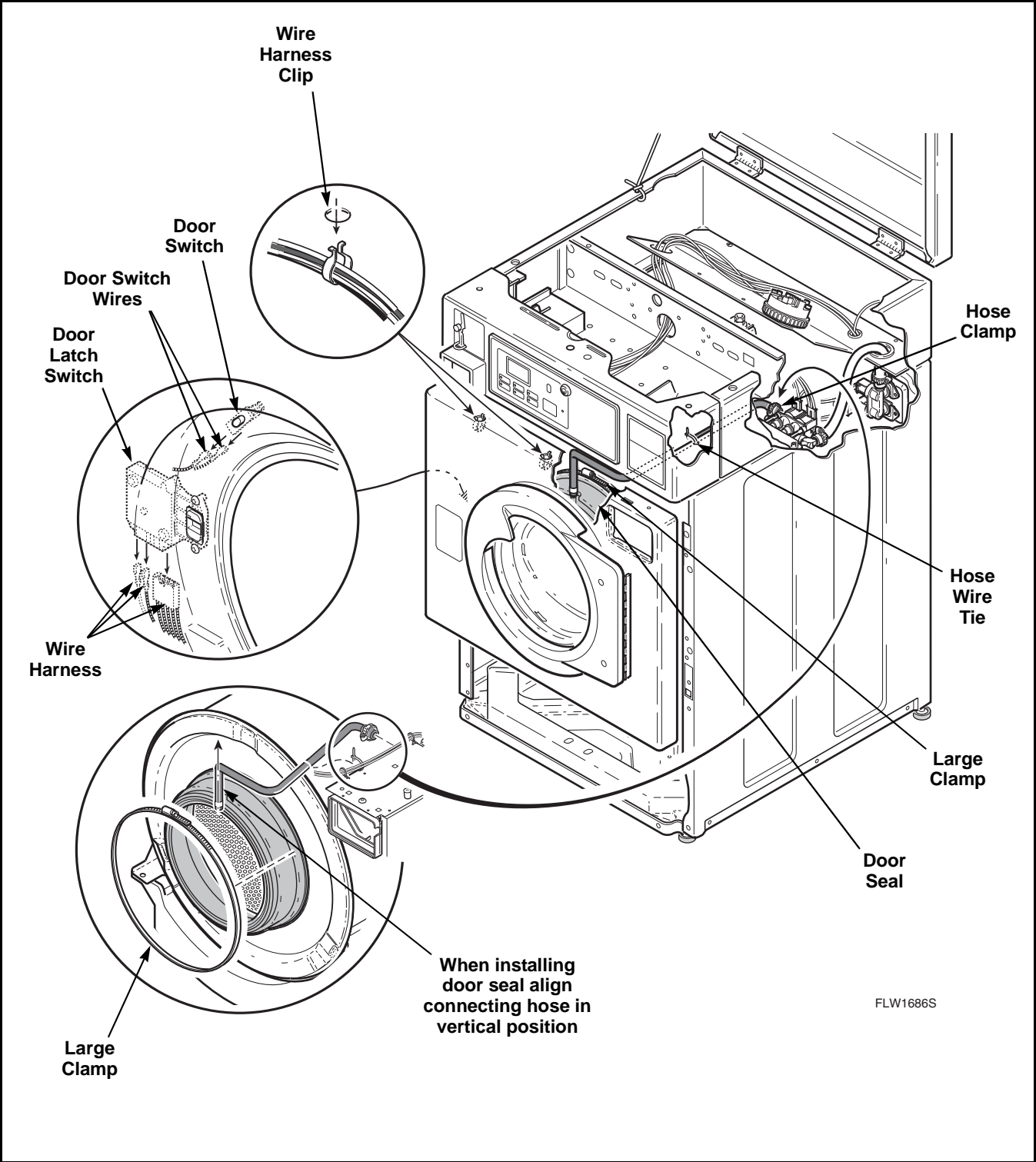


Figure 43



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.
- Motor not grounded! Disconnect electric power before servicing motor.

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44. LOADING DOOR

- Unlatch and open loading door.
- Remove door bezel by removing screws holding door bezel to inner door and glass. Refer to *Figure 44*.
- While supporting loading door, remove screws, lockwashers and nuts holding loading door to hinge assembly and remove door. Refer to *Figure 44*.

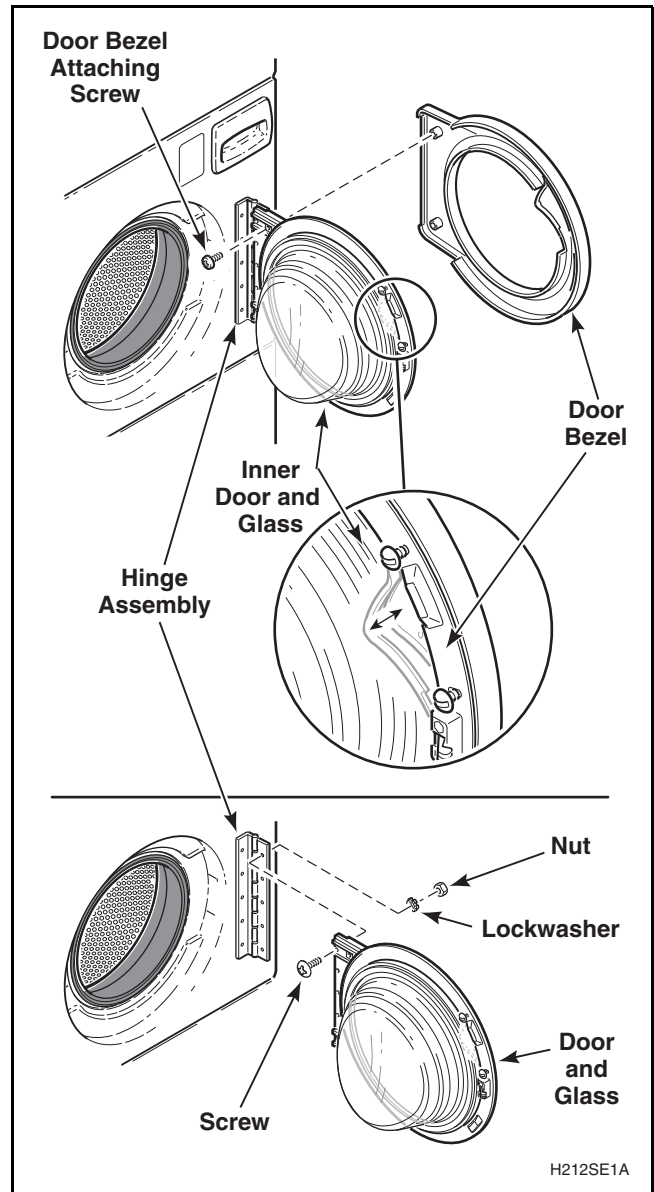


Figure 44



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.
- Motor not grounded! Disconnect electric power before servicing motor.

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45. DOOR SEAL AND HOSE ASSEMBLY

- a. While supporting lower front access panel, remove two screws from bottom edge of panel and remove panel. Refer to *Figure 24*.
- b. Using the special tool, No. 318P4, remove dispenser drawer. Refer to *Figure 25*.
- c. **Front Control Washers –**
 - (1) Unlock control panel. Refer to *Figure 14*, 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 14*, Step “2”.
 - (3) Remove control panel away from control cabinet as far as wires permits. Refer to *Figure 14*, Step “3”.
 - (4) Remove two screws holding front of cabinet top to top front edge of control cabinet front. Refer to *Figure 21*.

Rear Control Washers –

- (1) Unlock and remove meter case service door. Refer to *Figure 29*.
- (2) Remove shoulder screw from inside meter case. Refer to *Figure 29*.
- (3) Remove security bolt (if present) from left rear corner of cabinet top. Refer to *Figure 29*.
- d. Open loading door. Carefully remove wire clamp ring from groove with small flat blade screwdriver. Spring is in 6 o'clock position. Refer to *Figure 26*.

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

- e. Grasp loading door seal lip. Refer to *Figure 40*, 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.

- f. Using a circular motion, pull seal up (*Figure 40*, Step “1”), out (*Figure 40*, Step “2”), and down (*Figure 40*, Step “3”).

- g. When seal releases from lip of front panel, pull out and remove the seal. Refer to *Figure 40*, Step “4”.
- h. While supporting the front panel assembly, remove the two bottom front corner screws. Refer to *Figure 28*. Remove front panel (with loading door attached) away from washer as far as wires permit.
- i. Unplug wire harness from both the door latch switch and from the door switch. Refer to *Figure 43*. 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. Refer to *Figure 43*.

- j. **Rear Control Washers –** Remove two screws holding cabinet top to front flange of side panels. Refer to *Figure 27*.
- k. 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 22*.

- l. Loosen hose clamp and remove dispenser valve-to-door seal hose connection at the dispenser. Refer to *Figure 43*.

IMPORTANT: When installing door seal hose, pull hose tie tight to prevent damage. Refer to *Figure 32*.

- m. 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 43*.

NOTE: Door seal installation can be improved using water or soap solution to work seal around circumference of loading door opening. Be sure to install seal with the tab in the 12 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.
- Motor not grounded! Disconnect electric power before servicing motor.

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46. DOOR SWITCH

- a. Open loading door.
- b. Carefully remove wire clamp ring from groove with small flat blade screwdriver. Spring is located in the 6 o'clock position. Refer to *Figure 26*.

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

- c. Grasp loading door seal lip. Refer to *Figure 40*, 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.

- d. Using a circular motion, pull seal up (*Figure 40*, Step "1"), out (*Figure 40*, Step "2"), and down (*Figure 40*, Step "3").
- e. When seal releases from lip of front panel, pull out and remove the seal. Refer to *Figure 40*, Step "4".
- f. Reach up between door seal and front panel. Refer to *Figure 43*. 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.

47. DOOR LATCH SWITCH

- a. Open loading door.
- b. Carefully remove wire clamp ring from groove with small flat blade screwdriver. Spring is located in the 6 o'clock position. Refer to *Figure 26*.

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

- c. Grasp loading door seal lip. Refer to *Figure 40*, 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.

- d. Using a circular motion, pull seal up (*Figure 40*, Step "1"), out (*Figure 40*, Step "2"), and down (*Figure 40*, Step "3").
- e. When seal releases from lip of front panel, pull out and remove the seal. Refer to *Figure 40*, Step "4".
- f. While supporting door lock from the back (through door opening), remove two Phillips head screws holding door latch switch to front panel. Refer to *Figure 43*.
- g. Gently pull door lock out through door opening. Remove door lock only far enough to disconnect harness connector from door lock. Refer to *Figure 43*.

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

48. MOTOR

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

Motor Removal –

- a. While supporting lower front access panel, remove two screws from bottom edge of panel and remove panel. Refer to *Figure 24*.
- b. **Front Control Washers –**
 - (1) Unlock control panel. Refer to *Figure 14*, 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 14*, Step "2".
 - (3) Remove control panel away from control cabinet as far as wires permit. Refer to *Figure 14*, 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.
- Motor not grounded! Disconnect electric power before servicing motor.

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- (4) Remove two screws holding front of cabinet top to top front edge of control cabinet front. Refer to *Figure 21*.

Rear Control Washers –

- (1) Using the special tool, No. 318P4, remove dispenser drawer. Refer to *Figure 25*.
- (2) Open loading door. Carefully remove wire clamp ring from groove with small flat blade screwdriver. Spring is in 6 o'clock position. Refer to *Figure 26*.

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

- (3) Grasp loading door seal lip. Refer to *Figure 40*, 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.

- (4) Using a circular motion, pull seal up (*Figure 40*, Step 1), out (*Figure 40*, Step 2) and down (*Figure 40*, Step 3).
- (5) When seal releases from lip of front panel, pull out and remove the seal. Refer to *Figure 40*, Step 4.
- (6) While supporting the front panel assembly, remove the two bottom front corner screws. Refer to *Figure 28*. Remove front panel (with loading door attached) away from washer as far as wires permit.
- (7) Unplug wire harness from both the door latch switch and from the door switch. Refer to *Figure 43*. Remove clips holding wire harness and door seal hose along top flange of front panel and remove front panel.
- (8) Unlock and remove meter case service door. Refer to *Figure 29*.
- (9) Remove shoulder screw from inside meter case. Refer to *Figure 29*.
- (10) Remove two screws holding cabinet top to front flange of side panel. Refer to *Figure 27*.

- (11) Remove security bolt (if present) from left rear corner of cabinet top. Refer to *Figure 29*.

- c. If area or space permits, lift cabinet top to a vertical position by hinging it on the rear hinges. Refer to *Figure 22*.

NOTE: To avoid damage to hinges, be sure to support cabinet top with a small chain or something similar. Refer to *Figure 22*.

- d. Run belt off inner basket pulley while slowly turning pulley. Refer to *Figure 41*.
- e. Remove belt from motor shaft.
- f. Cut the wire tie holding small harness connector to motor, then disconnect both motor harness connectors from motor.
- g. Using a magic marker, outline the washer on the front and rear adjusting bolt holding motor to bracket so the belt can be tightened to the same location.
- h. Use a 6 inch piece of 2x4 to support motor. Grasp the metal rod with a locking pliers and remove four bolts and washers holding motor to motor bracket. Refer to *Figure 41* and remove motor out through front of washer.

Motor Installation –

- a. Place new motor into washer and allow motor to rest on washer base.
- b. Reconnect harness connector to new motor. Refer to *Figure 41*.
- c. Install new wire tie holding small harness connector to motor frame. This is necessary to prevent future service calls.
- d. Lift motor into position within the motor bracket and install the front pivot bolt and washer. Refer to *Figure 41*. Then install the rear pivot bolt and washer. Leave bolt snug, do not tighten.
- e. Pivot motor up into motor bracket and install the front adjusting bolt and washer. Refer to *Figure 41*. Then install rear adjusting bolt and washer. Leave bolts snug.



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.
- Motor not grounded! Disconnect electric power before servicing motor.

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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.

- f. Place belt on motor pulley, then carefully run belt on inner basket pulley while slowly turning pulley. Refer to *Figure 41*.
- g. Open loading door, reach into inner basket and rotate inner basket several times by hand. Recheck belt alignment.
- h. 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 41*.
- i. After proper belt tension has been obtained, tighten belt adjusting bolts firmly, then tighten pivot bolts. Refer to *Figure 41*.
- j. Reinstall lower front access panel. Refer to *Figure 24*.
- k. Lower cabinet top and install hold-down screws.
- l. **Front Control Washers** – Reinstall control panel.
Rear Control Washers – Reinstall meter case, front panel, door seal and dispenser drawer.

49. OUTER TUB FRONT PANEL

- a. While supporting lower front access panel, remove two screws from bottom edge of panel and remove panel. Refer to *Figure 24*.
- b. Using the special tool, No. 318P4, remove dispenser drawer. Refer to *Figure 24*.
- c. **Front Control Washers** –
 - (1) Unlock control panel. Refer to *Figure 14*, Step “1”.
 - (2) 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 14*, Step “2”.

- (3) Remove control panel away from control cabinet. Refer to *Figure 14*, Step “3”.
- (4) Remove two screws holding front of cabinet top to top front edge of control cabinet front. Refer to *Figure 21*.

Rear Control Washers –

- (1) Unlock and remove meter case service door. Refer to *Figure 29*.
- (2) Remove shoulder screw from inside meter case. Refer to *Figure 29*.
- (3) Remove security bolt (if present) from left rear corner of cabinet top. Refer to *Figure 29*.
- d. 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 26*.

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

- e. Grasp loading door seal lip. Refer to *Figure 40*, 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.

- f. Using a circular motion, pull seal up (*Figure 40*, Step “1”), out (*Figure 40*, Step “2”), and down (*Figure 40*, Step “3”).
- g. When seal releases from lip of front panel, pull out and remove the seal. *Figure 40*, Step “4”.

NOTE: Door seal installation can be improved using water to soap solution to work seal around circumference of loading door opening. Be sure to install 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.

- h. While supporting the front panel assembly, remove the two bottom front corner screws. Refer to *Figure 28*. Remove front panel (with loading door attached) away from washer as far as wires permit.



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.
- Motor not grounded! Disconnect electric power before servicing motor.

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- i. Unplug wire harness from both the door latch switch and from the door switch. Refer to *Figure 43*. 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.

- j. **Rear Control Washers** – Remove two screws holding cabinet top to front flange of side panel. Refer to *Figure 27*.
- k. If area or space permits, lift cabinet top to a vertical position by hinging it on the rear hinges. Refer to *Figure 22*.

NOTE: To avoid damage to hinges, be sure the support cabinet top with a small chain or something similar. Refer to *Figure 22*.

- l. Loosen hose clamp and remove dispenser valve-to-door seal hose connection at the dispenser. Refer to *Figure 43*.

IMPORTANT: When installing door seal hose, pull hose tie tight to prevent damage. Refer to *Figure 43*.

- m. 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 43*.

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

- n. Disconnect ground wire from outer tub front panel. Refer to *Figure 45*.
- o. Remove nut, washers and screw holding clamp ring to outer tub front panel. Refer to *Figure 45*.
- p. Remove rubber seal from outer tub front panel and discard seal.

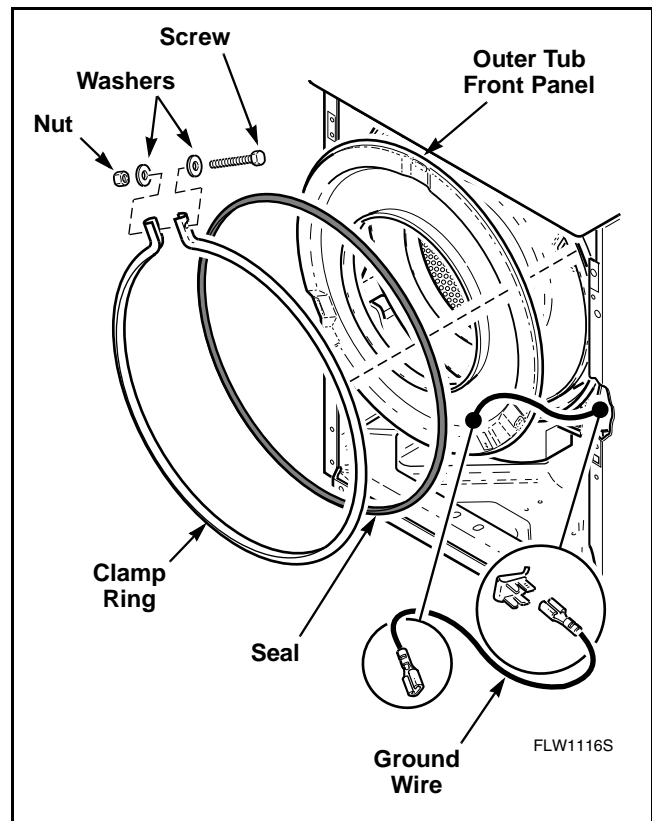


Figure 45

IMPORTANT: Always replace outer tub 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 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 or cabinet top. 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.
- Motor not grounded! Disconnect electric power before servicing motor.

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50. INNER BASKET PULLEY

a. Front Control Washer –

- (1) Unlock control panel. Refer to *Figure 14*, Step “1”.
- (2) 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 14*, Step “2”.
- (3) Remove control panel away from control cabinet as far as wires permit. Refer to *Figure 14*, Step “3”.
- (4) Remove two screws holding front of cabinet top to top front edge of control cabinet front. Refer to *Figure 21*.

Rear Control Washers –

- (1) Unlock and remove meter case service door. Refer to *Figure 29*.
- (2) Remove shoulder screw from inside meter case. Refer to *Figure 29*.
- (3) Remove security bolt (if present) from left rear corner of cabinet top. Refer to *Figure 29*.
- (4) While supporting lower front access panel, remove two screws from bottom edge of panel and remove panel. Refer to *Figure 36*.
- (5) Using the special tool, No. 318P4, remove dispenser drawer. Refer to *Figure 25*.
- (6) 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 26*.

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

- (7) Grasp loading door seal lip. Refer to *Figure 40*, 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.

- (8) Using a circular motion, pull seal up (*Figure 40*, Step 1), out (*Figure 40*, Step 2), and down (*Figure 40*, Step 3).

- (9) When seal releases from lip of front panel, pull out and remove the seal from front panel around door opening. Refer to *Figure 40*, Step 4.

NOTE: Door seal installation can be improved using water to soap solution to work seal around circumference of loading door opening. Be sure to install 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.

- (10) While supporting the front panel assembly, remove the two bottom front corner screws. Refer to *Figure 28*. Remove front panel (with loading door attached) away from washer as far as wires permit.
- (11) Unplug wire harness from both the door latch switch and from the door switch. Refer to *Figure 43*. 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. Refer to *Figure 43*.

- (12) Remove two screws holding cabinet top to front flange of side panels. Refer to *Figure 27*.
- b. 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 22*.

- c. Run belt off pulley while slowly turning pulley. Refer to *Figure 41*.
- d. Remove belt from motor shaft.
- e. Remove cap screw (left hand thread), lockwasher and flat washer holding pulley to inner basket shaft. Refer to *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.
- Motor not grounded! Disconnect electric power before servicing motor.

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NOTE: Cap screw can be accessed through hole in rear panel by removing hole plug. Refer to *Figure 46*.

f. Remove pulley from shaft.

IMPORTANT: When installing pulley, always use a new cap screw 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.

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).

g. After installing belt, adjust belt tension as follows:

- (1) Working through the access door opening, place a locking pliers on the metal rod and loosen the two adjusting bolts. Refer to *Figure 41*. Repeat procedure to loosen the two pivot bolts. Refer to *Figure 41*.
- (2) 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 41*.
- (3) After proper belt tension has been obtained, tighten belt adjusting bolts firmly, then tighten pivot bolts. Refer to *Figure 41*.

51. INNER BASKET ASSEMBLY

Inner Basket Removal –

- a. While supporting lower front access panel, remove two screws from bottom edge of panel and remove panel. Refer to *Figure 36*.
- b. Using the special tool, No. 318P4, remove dispenser drawer. Refer to *Figure 25*.

c. Front Control Washers –

- (1) Unlock control panel. Refer to *Figure 14*, Step “1”.
- (2) 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 14*, Step “2”.
- (3) Remove control panel away from control cabinet as far as wires permit. Refer to *Figure 14*, Step “3”.
- (4) Remove two screws holding front of cabinet top to top front edge of control cabinet front. Refer to *Figure 21*.

Rear Control Washers –

- (1) Unlock and remove meter case service door. Refer to *Figure 29*.
 - (2) Remove shoulder screw from inside meter case. Refer to *Figure 29*.
 - (3) Remove security bolt (if present) from left rear corner of cabinet top. Refer to *Figure 29*.
- d. Open loading door. Carefully remove wire clamp ring from groove with small flat blade screwdriver. Spring is in 6 o'clock position. Refer to *Figure 26*.

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

- e. Grasp loading door seal lip. Refer to *Figure 40*, 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.

- f. Using a circular motion, pull seal up (*Figure 40*, Step “1”), out (*Figure 40*, Step “2”), and down (*Figure 40*, Step “3”).
- g. When seal releases from lip of front panel, pull out and remove the seal. Refer to *Figure 40*, Step “4”.



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.
- Motor not grounded! Disconnect electric power before servicing motor.

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- h. While supporting the front panel assembly, remove the two bottom front corner screws. Refer to *Figure 28*. Remove front panel (with loading door attached) away from washer as far as wires permit.
- i. Unplug wire harness from both the door latch switch and from the door switch. Refer to *Figure 43*. 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. Refer to *Figure 43*.

- j. **Rear Control Washers** – Remove two screws holding cabinet top to front flange of side panels. Refer to *Figure 27*.
- k. If area or space permits, lift cabinet top to a vertical position by hinging it on the rear hinges. Refer to *Figure 22*.

NOTE: To avoid damage to hinges, be sure to support cabinet top with a small chain or something similar. Refer to *Figure 22*.

- l. Loosen hose clamp and remove dispenser valve-to-door seal hose connection at the dispenser. Refer to *Figure 43*.

IMPORTANT: When installing door seal hose, pull hose tie tight to prevent damage. Refer to *Figure 43*.

- m. 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 43*.

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

- n. Disconnect ground wire from outer tub front panel. Refer to *Figure 45*.
- o. Remove nut, washers and screw holding clamp ring to outer tub front panel. Refer to *Figure 45*.
- p. 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 underside of the control cabinet or cabinet top. Tighten the clamp ring screw and nut until a spacing of one inch is achieved at the clamp ring opening or until tight.

- q. Run belt off pulley while slowly turning pulley. Refer to *Figure 41*.
- r. Remove belt from motor shaft.
- s. Remove cap screw (left hand thread), lockwasher and flat washer holding pulley to inner basket shaft. Refer to *Figure 46*.

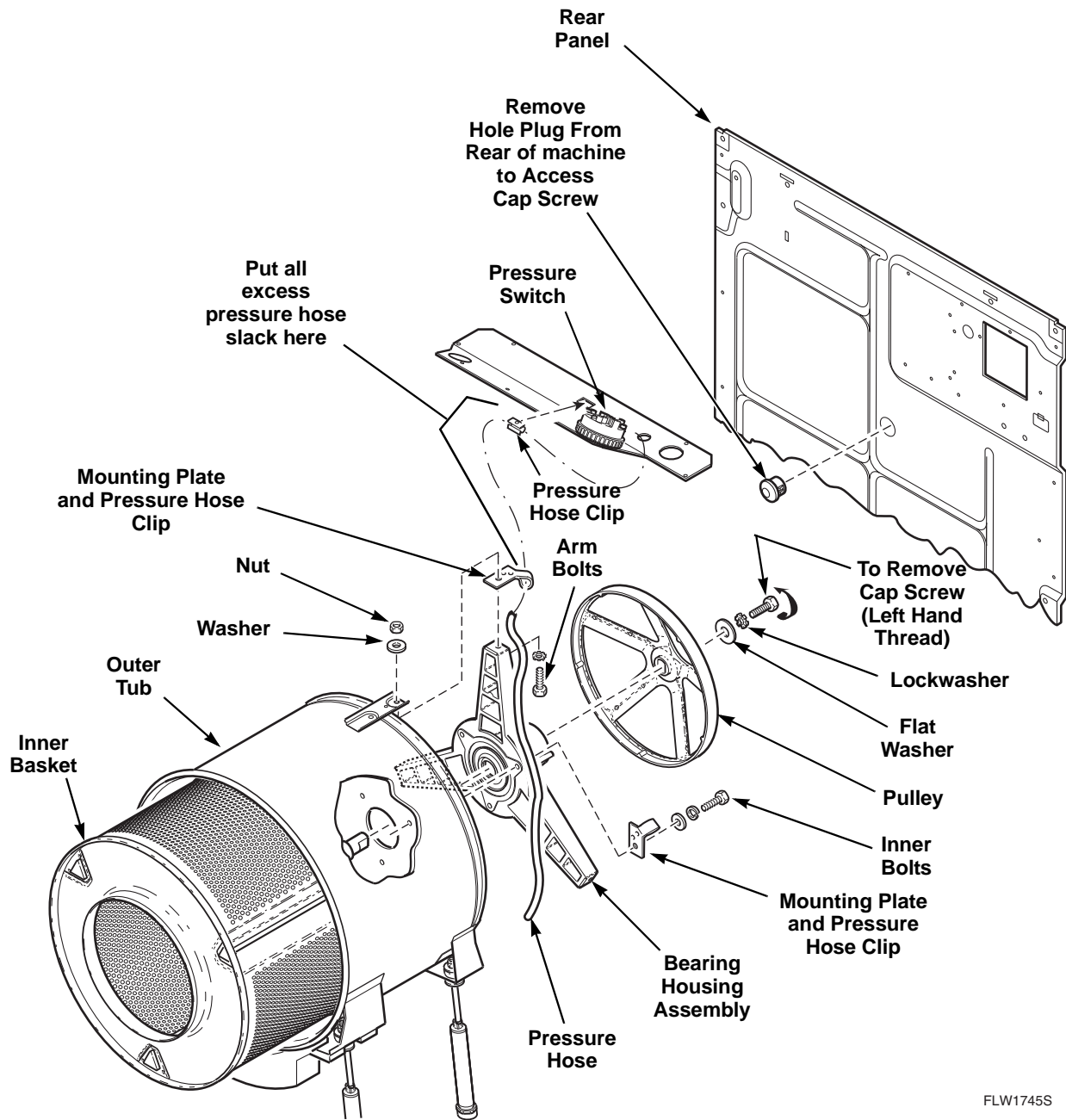
NOTE: Cap screw can be accessed through hole in rear panel by removing hole plug. Refer to *Figure 46*.

- t. Remove pulley from shaft.

IMPORTANT: When installing pulley, always use a new cap screw 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.

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).

- u. After installing belt, adjust belt tension per *Paragraph 55*.
- v. Carefully remove inner basket out through front of washer.



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**FRONT CONTROL WASHER
ILLUSTRATED**

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.
- Motor not grounded! Disconnect electric power before servicing motor.

W485

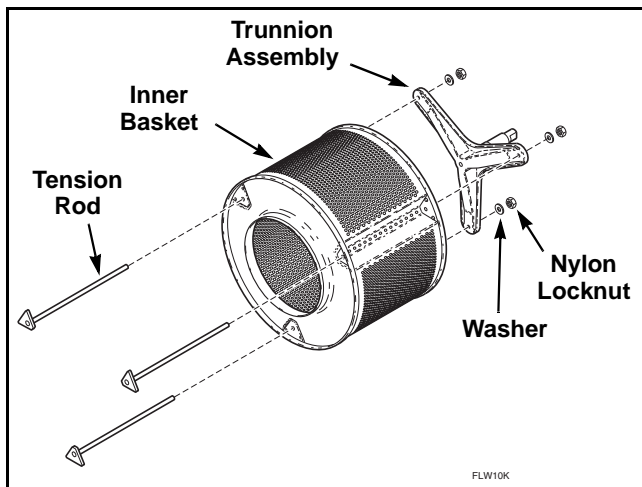


Figure 47

Installing 800749P Trunnion Kit or 800198P Inner Basket Kit

- Remove nuts, washers and tension rods holding trunnion to inner basket. Refer to *Figure 47*.
- If using existing trunnion, clean out old Loctite from pulley bolt threads using a 3/8-24 UNF Left Hand Tap.
- Dip threads of three new tension rods into lightweight oil.
- Insert tension rods into inner basket. Refer to *Figure 47*. Position each rod so the rounded corner of triangular head faces the center of inner basket. Refer to *Figure 48*.
- Position trunnion assembly through rods and onto inner basket.
- Attach three washers and three new nylon locknuts onto rods. Leave the nuts loose.

IMPORTANT: Always use new nylon locknuts.

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

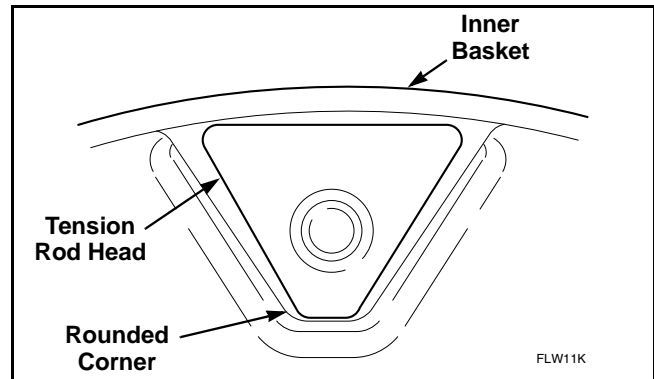


Figure 48

not within .05 inch, remove assembly from washer and adjust location of trunnion. Repeat until concentricity is within .05 inch.

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

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 50*.
- Apply a film of grease to area of shaft that will be contacting the bearing housing seal. Refer to *Figure 50*. Make sure seal lips also are packed with grease. Refer to *Figure 50*.

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 thread screw. Refer to *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.
- Motor not grounded! Disconnect electric power before servicing motor.

W485

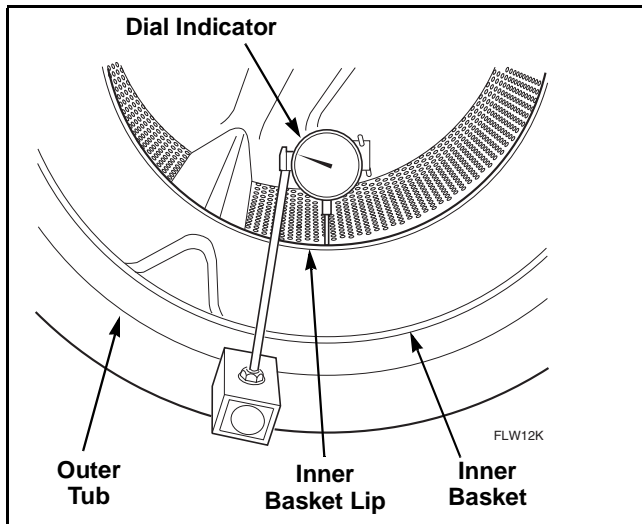


Figure 49

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 51*.
- 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).

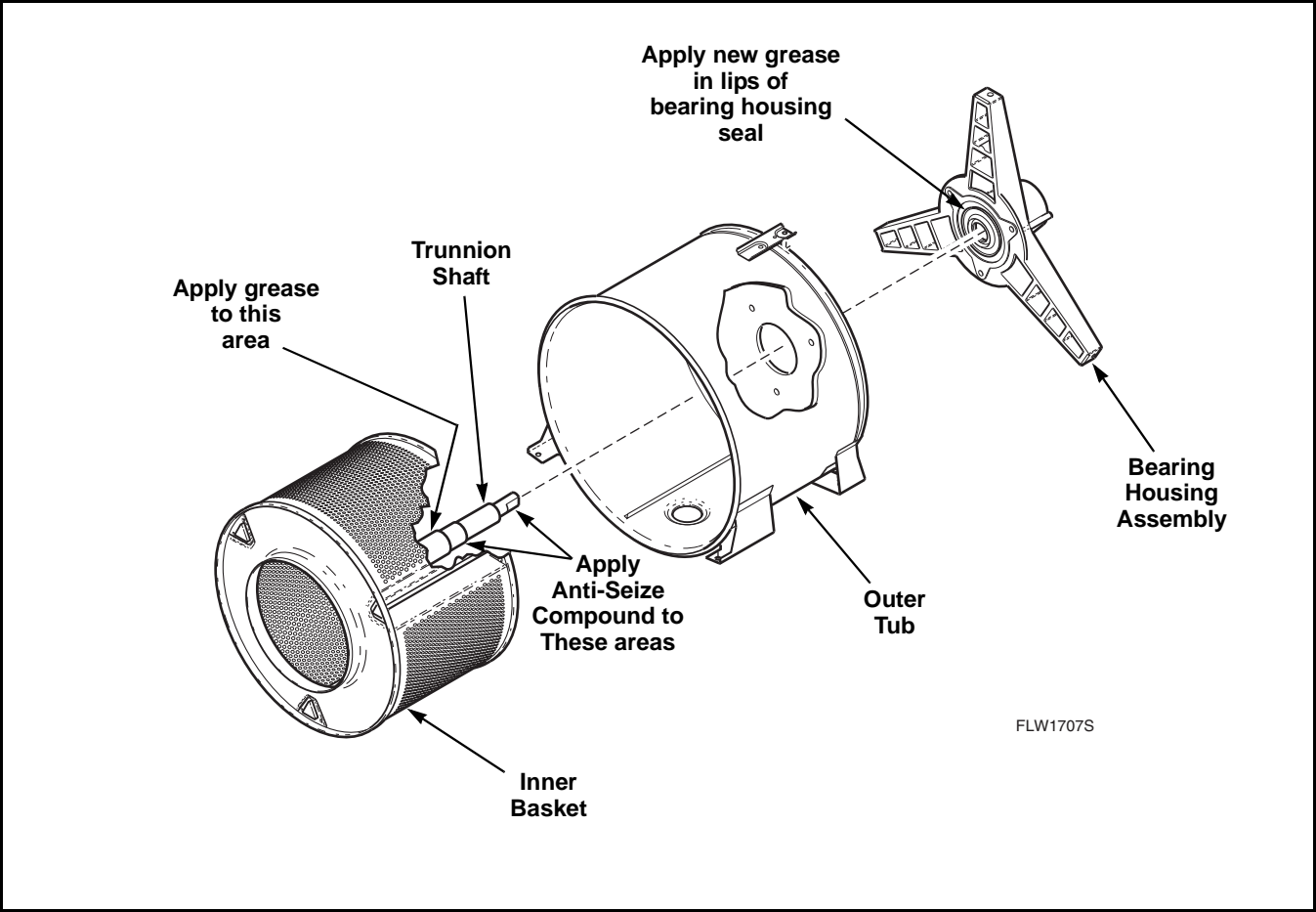


Figure 50

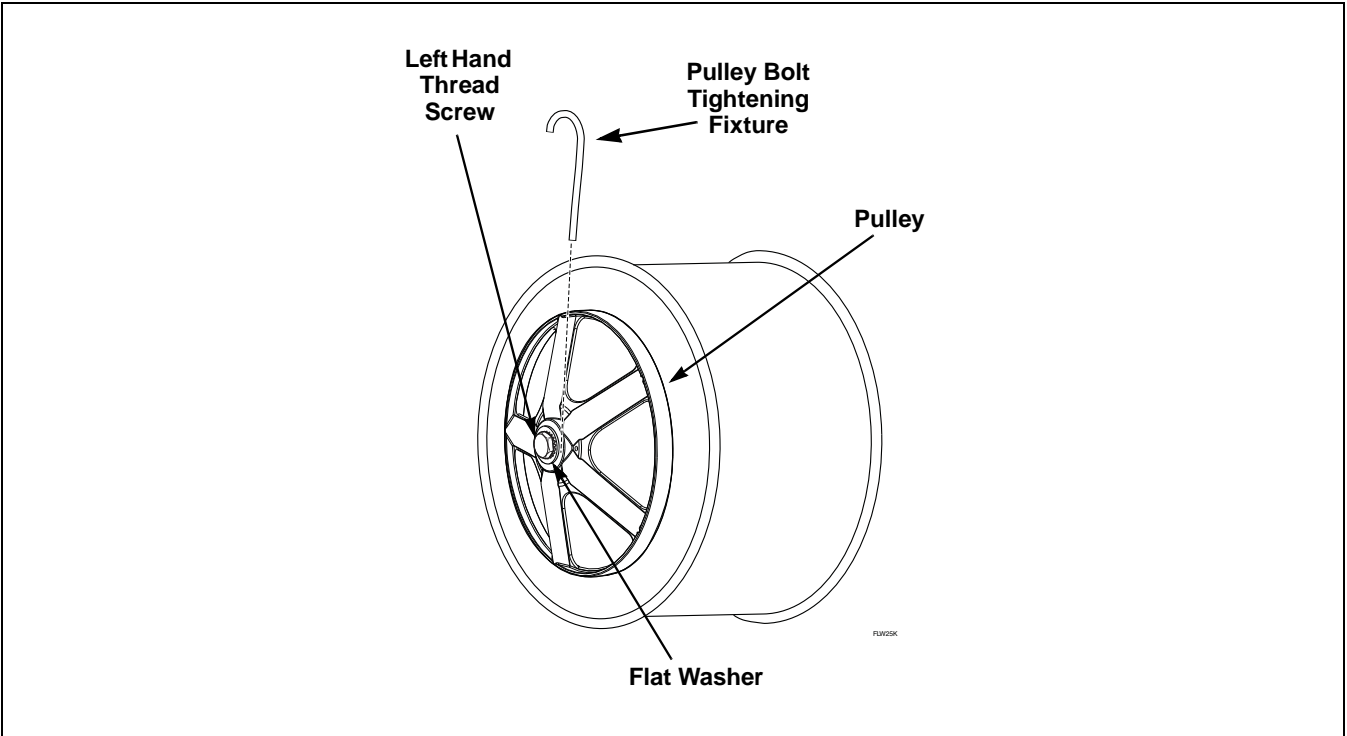


Figure 51



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.
- Motor not grounded! Disconnect electric power before servicing motor.

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52. BEARING HOUSING

Bearing Housing Removal –

- a. While supporting lower front access panel, remove two screws from bottom edge of panel and remove panel. Refer to *Figure 36*.
- b. Use special tool, No. 318P4, and remove dispenser drawer. Refer to *Figure 25*.
- c. **Front Control Washers –**
 - (1) Unlock control panel. Refer to *Figure 14*, Step “1”.
 - (2) 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 14*, Step “2”.
 - (3) Remove control panel away from control cabinet as far as wires permit. Refer to *Figure 14*, Step “3”.
 - (4) Remove two screws holding front of cabinet top to top front edge of control cabinet front. Refer to *Figure 21*.

Rear Control Washers –

- (1) Unlock and remove meter case service door. Refer to *Figure 29*.
- (2) Remove shoulder screw from inside meter case. Refer to *Figure 29*.
- (3) Remove security bolt (if present) from left rear corner of cabinet top. Refer to *Figure 29*.
- d. Open loading door. Carefully remove wire clamp ring from groove with a small flat blade screwdriver. Spring is in 6 o'clock position. Refer to *Figure 26*.

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

- e. Grasp loading door seal lip. Refer to *Figure 40*, 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.

- f. Using a circular motion, pull seal up (*Figure 40*, Step “1”), out (*Figure 40*, Step “2”), and down (*Figure 40*, Step “3”).

- g. When seal releases from lip of front panel, pull out and remove the seal. Refer to *Figure 40*, Step “4”.
- h. While supporting the front panel assembly, remove the two bottom front corner screws. Refer to *Figure 28*. Remove front panel (with loading door attached) away from washer as far as wires permit.

NOTE: Refer to wiring diagram when rewiring door switch.

- i. Unplug wire harness from both the door latch switch and from the door switch. Refer to *Figure 43*. Remove clips holding wire harness and door seal hose along top flange of front panel and remove front panel. Refer to *Figure 43*.

NOTE: The large wire clip holds both the wire harnesses and the door seal hose. Refer to *Figure 43*.

- j. **Rear Control Washers –** Remove two screws holding cabinet top to front flange of side panels. Refer to *Figure 27*.
- k. 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 22*.

- l. Loosen hose clamp and remove dispenser valve-to-door seal hose connection at the dispenser. Refer to *Figure 43*.

IMPORTANT: When installing door seal hose, pull hose tie tight to prevent damage. Refer to *Figure 43*.

- m. 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 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.
- Motor not grounded! Disconnect electric power before servicing motor.

W485

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

- n. Disconnect ground wire from outer tub front panel. Refer to *Figure 45*.
- o. Remove nut, washers and screw holding clamp ring to outer tub front panel. Refer to *Figure 45*.
- p. 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 clamp screw with threads and nut facing downward. Refer to *Figure 45*. Install clamp screw with threads and nut facing downward. Refer to *Figure 45*. 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 or cabinet top. 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.

- q. Run belt off pulley while slowly turning pulley. Refer to *Figure 41*.
- r. Remove belt from motor shaft.
- s. Remove cap screw (left hand thread), lockwasher and flat washer holding pulley to inner basket shaft. Refer to *Figure 46*.

NOTE: Cap screw can be accessed through hole in rear panel by removing hole plug. Refer to *Figure 46*.

- t. Remove pulley from shaft.

IMPORTANT: When installing pulley, always use a new cap screw 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.

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).

- u. After installing belt, adjust belt tension per *Paragraph 55*.
- v. Carefully remove inner basket out through front of washer.
- w. Remove three screws holding bearing housing arms to outer tub.

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 46*.

- x. While supporting bearing housing, remove three inner screws holding bearing housing to rear of outer tub. Refer to *Figure 46*.

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 46*. Then route pressure hose up to the hose mounting plate on the top arm. Refer to *Figure 46*. 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. Refer to *Figure 46*.

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).



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.
- Motor not grounded! Disconnect electric power before servicing motor.

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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 is packed with 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 50*.
- b. Apply a film of grease to area of shaft that will be contacting the bearing housing seal. Refer to *Figure 50*. Make sure seal lips also are packed with grease. Refer to *Figure 50*.

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 46*.

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 51*.
- 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).

Notes

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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.
- Motor not grounded! Disconnect electric power before servicing motor.

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

53. 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 52*.

NOTE: Level must rest on raised portion of top panel. Refer to *Figure 52*.

- 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.

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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

- Place rubber feet on all four leveling legs. Refer to *Figure 52*.

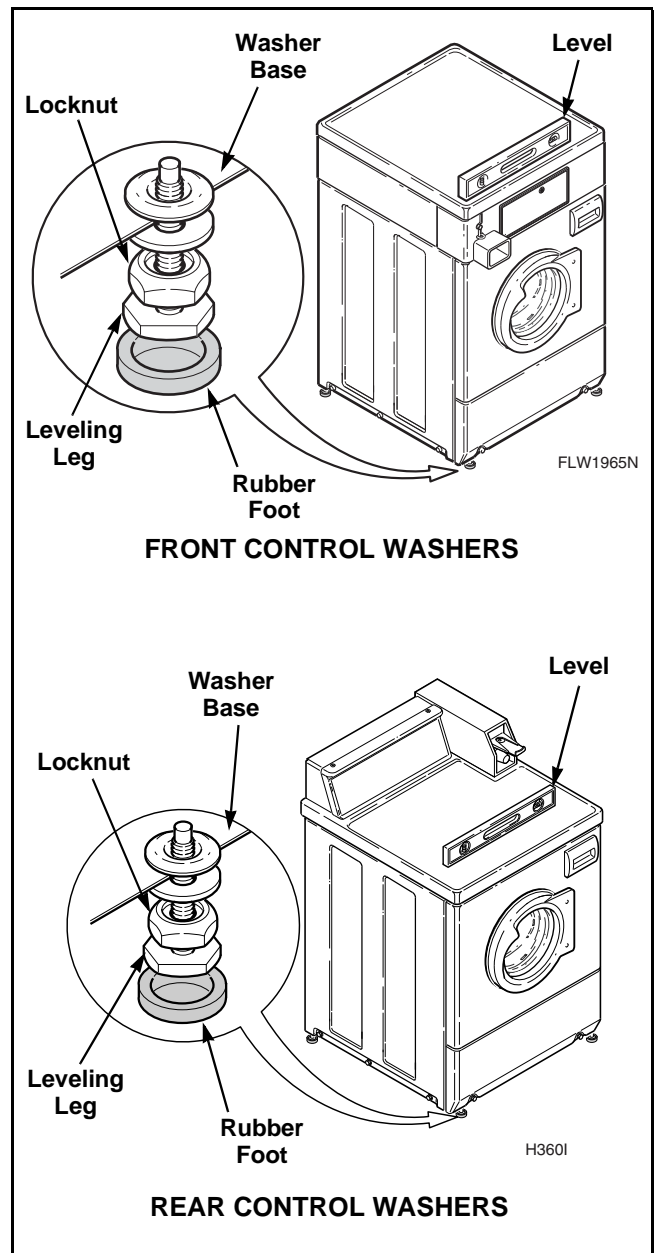


Figure 52



WARNING

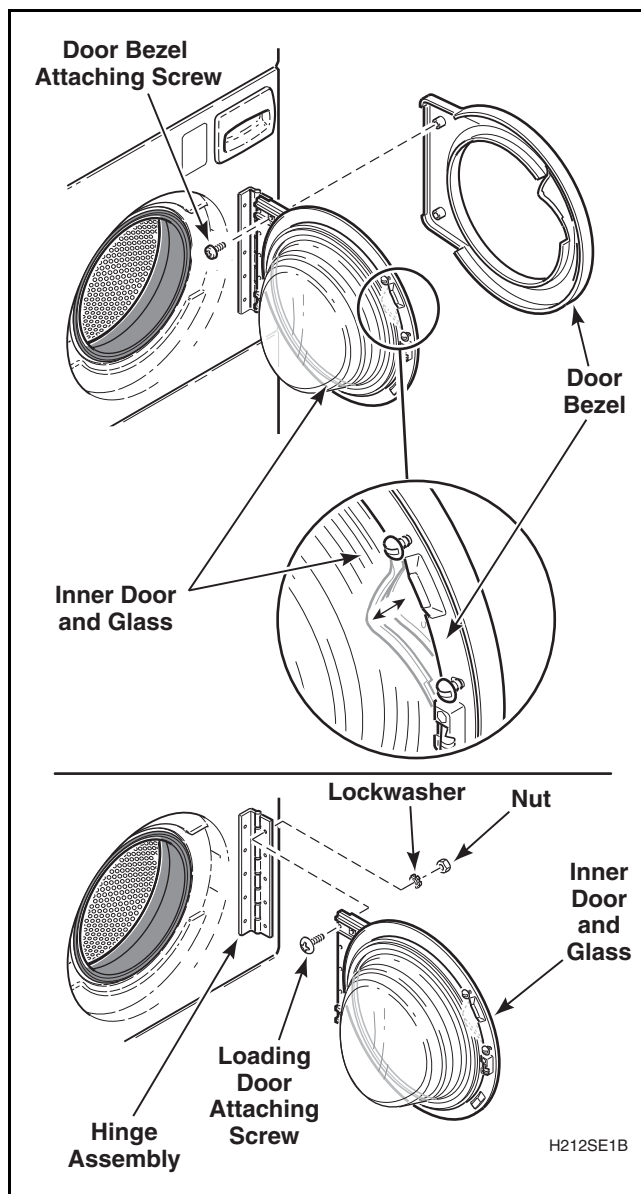
To reduce the risk of electric shock, fire, explosion, serious injury or death:

- 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.
- Motor not grounded! Disconnect electric power before servicing motor.

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54. LOADING DOOR

- Open loading door.
- Remove door bezel to gain access to nuts. Refer to *Figure 53*.
- The loading door can be adjusted up or down somewhat by loosening screws holding door to hinge, then raise or lower door before retightening screws. Refer to *Figure 53*.



H212SE1B

Figure 53



WARNING

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

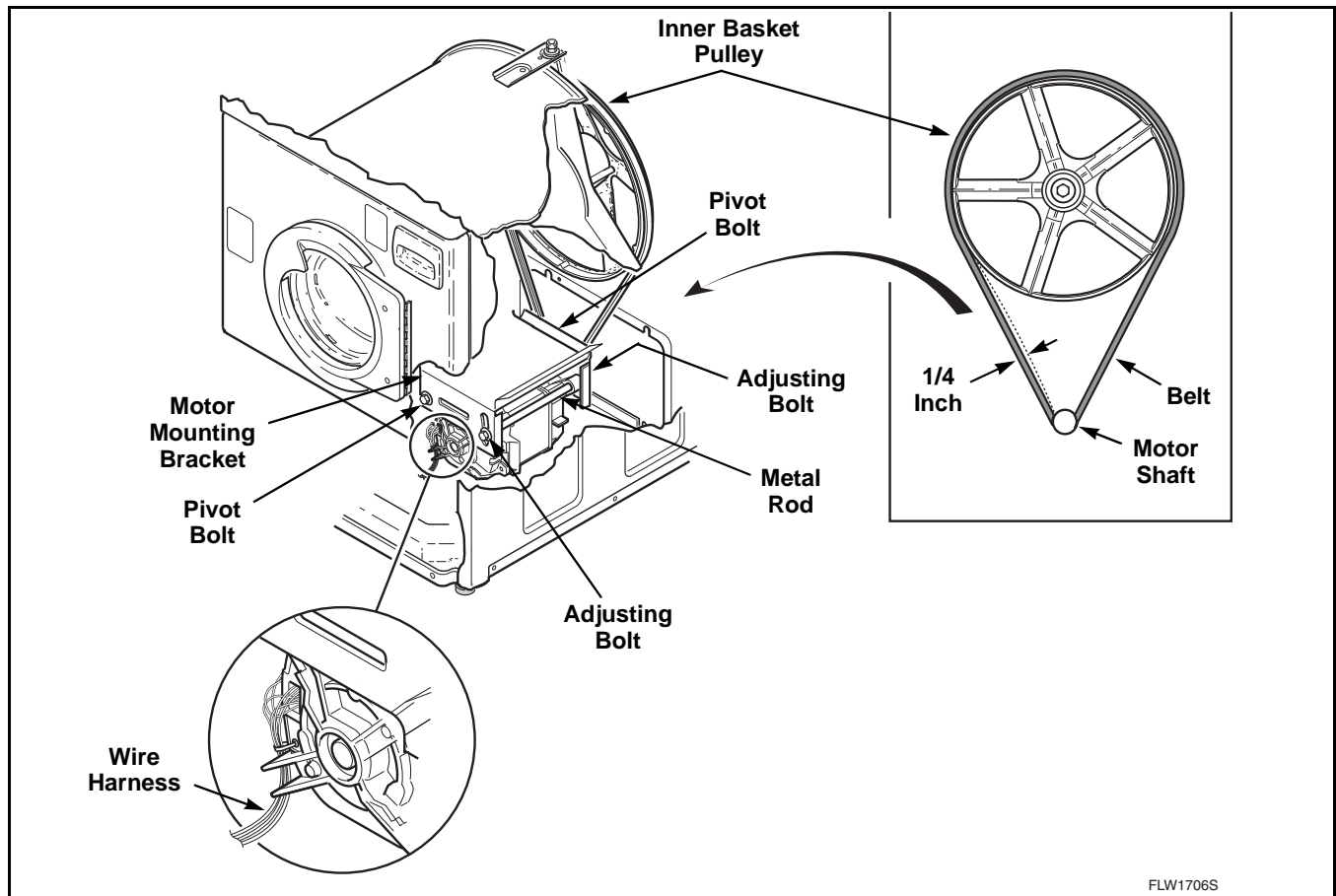
- Disconnect electric power to the washer before servicing.
- Never start the washer with any guards/panels removed.
- Whenever ground wires are removed during servicing, these ground wires must be reconnected to ensure that the washer is properly grounded.
- Motor not grounded! Disconnect electric power before servicing motor.

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55. 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 24*.
- 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 54*. Repeat procedure to loosen the two pivot bolts. Refer to *Figure 54*.
- 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 54*.
- After proper belt tension has been obtained, tighten belt adjusting bolts firmly, then tighten pivot bolts. Refer to *Figure 54*.



FLW1706S

Figure 54



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.
- Motor not grounded! Disconnect electric power before servicing motor.

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56. DOOR CATCH

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

- Remove door bezel. Refer to *Figure 53*.
- 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 55*.
- Visually check that the door catch properly engages the funnel of the door latch/switch assembly. Refer to *Figure 55*.
- Recheck the alignment in Step “d”. Adjust if needed.
- Torque the two nuts to approximately 30 inch pounds (3.4 Nm).
- Reinstall door bezel.

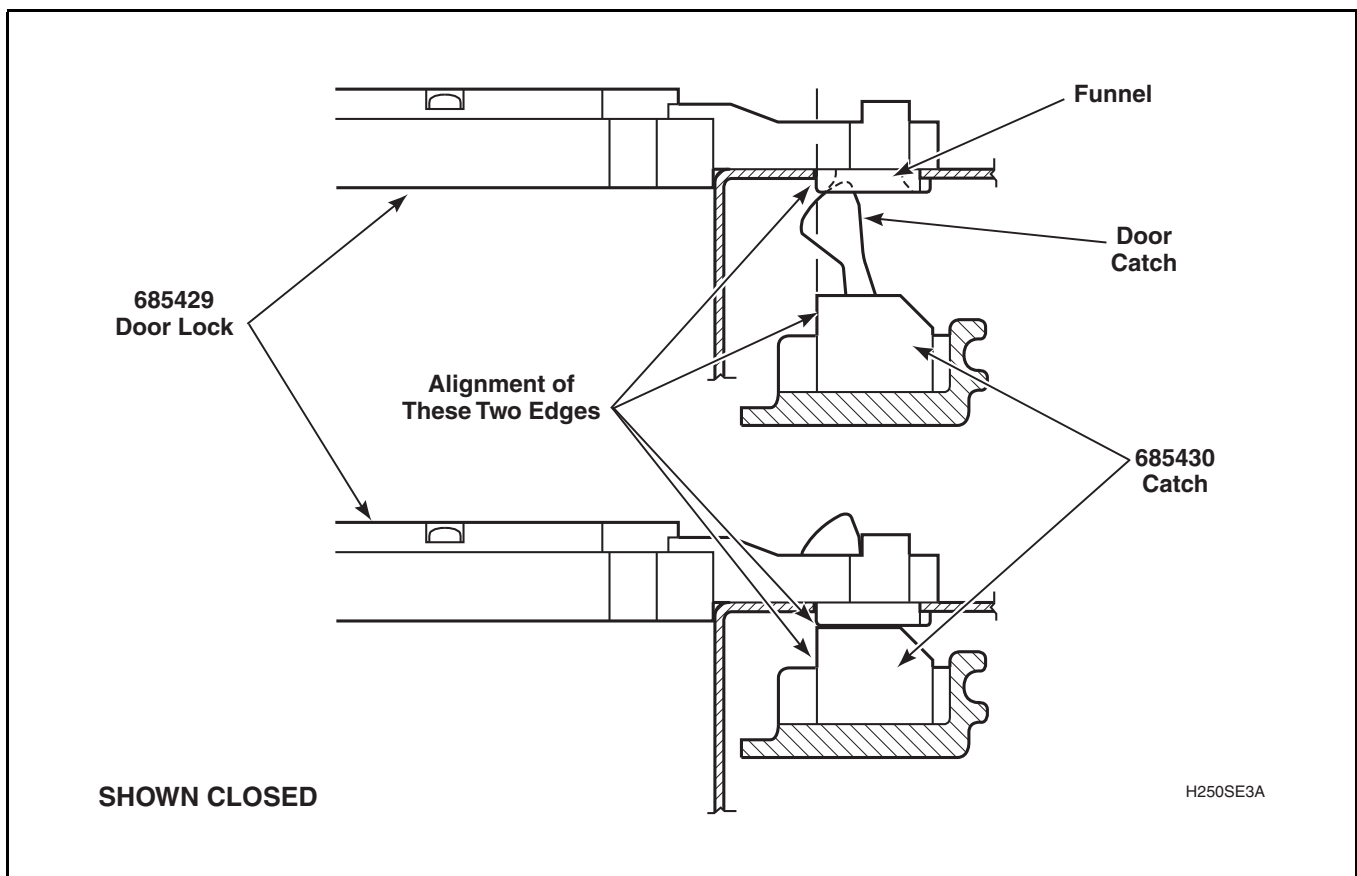


Figure 55



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.
- Motor not grounded! Disconnect electric power before servicing motor.

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57. SHIPPING BRACES

All frontload washers, when shipped from the factory are equipped with two factory installed shipping supports. DO NOT remove this shipping material until after washer is placed in its final installed position. Refer to *Figure 56*.

damage to the shock absorbers and will VOID the product warranty.

NOTE: Shipping supports MUST be kept for future re-positioning or moving of the washer.

IMPORTANT: DO NOT tip or move washer once these supports have been removed. Removal of supports prior to final installation may cause

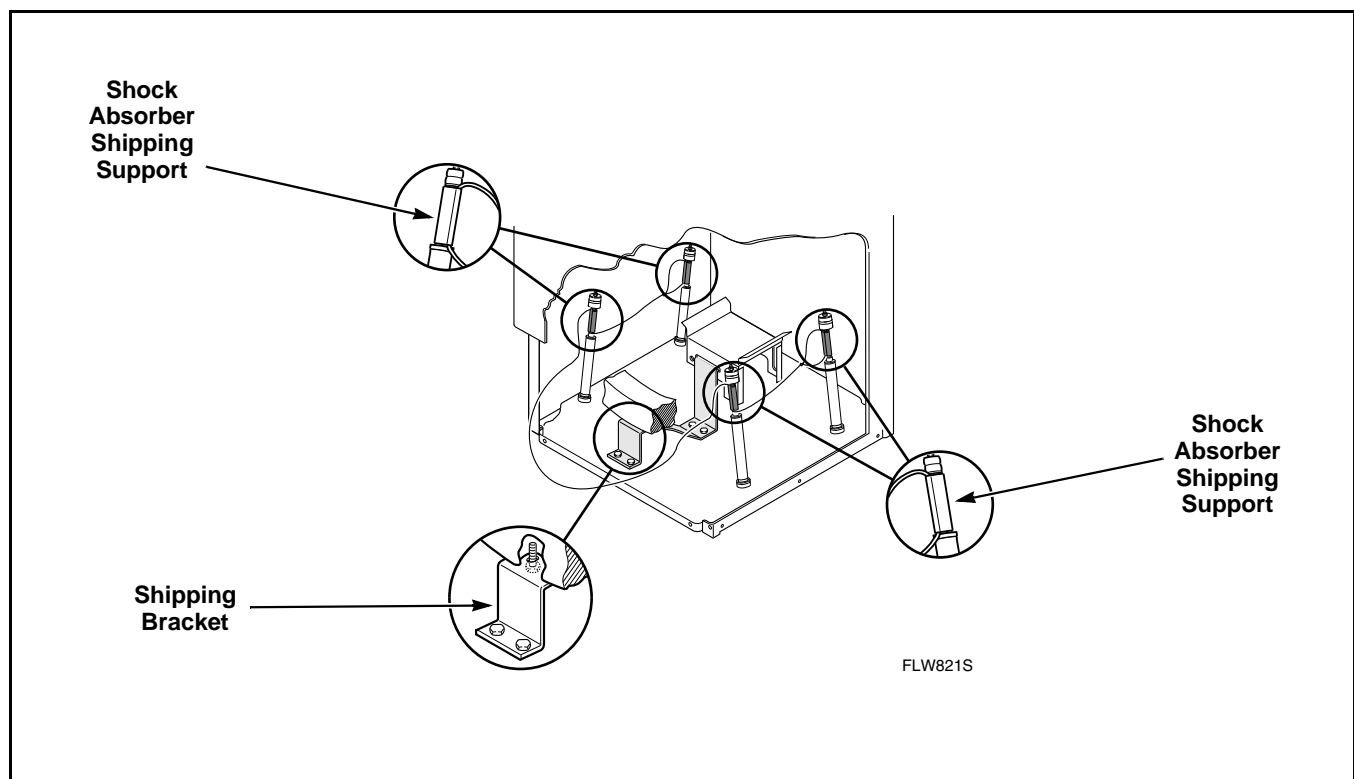


Figure 56



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.
- Motor not grounded! Disconnect electric power before servicing motor.

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58. NON-ELECTRONIC CLEANING COIN DROP

- Disconnect electrical power to machine and drop.
- Remove coin drop from machine. Refer to *Paragraph 34*.
- 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 57*.

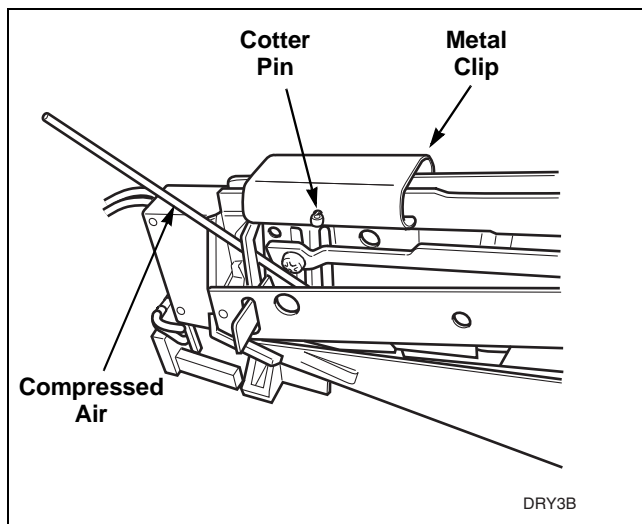


Figure 57

- 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 57*. Save pin for reinstallation when cleaning is complete.
- Move metal clip closer to sensor so that it comes off frame. Refer to *Figure 57*.

- Remove coin return from coin drop frame. Refer to *Figure 58*.

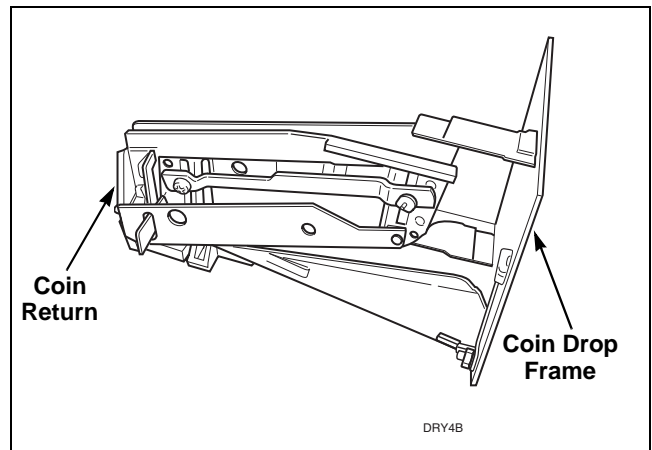


Figure 58

- 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 59*.

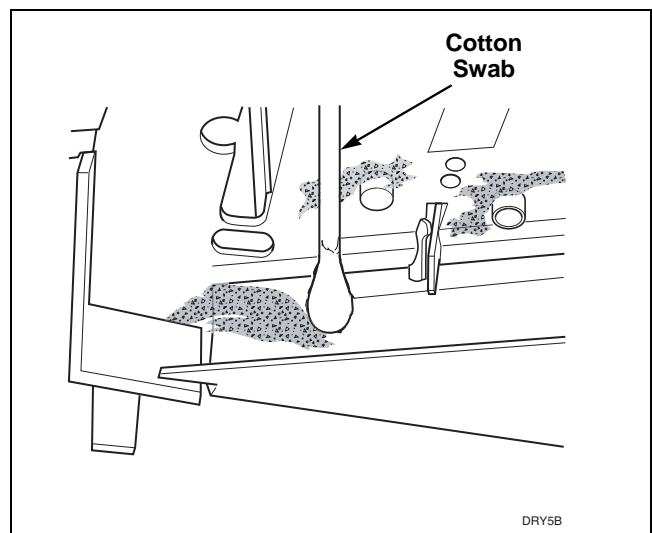


Figure 59



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.
- Motor not grounded! Disconnect electric power before servicing motor.

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- 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 60*.

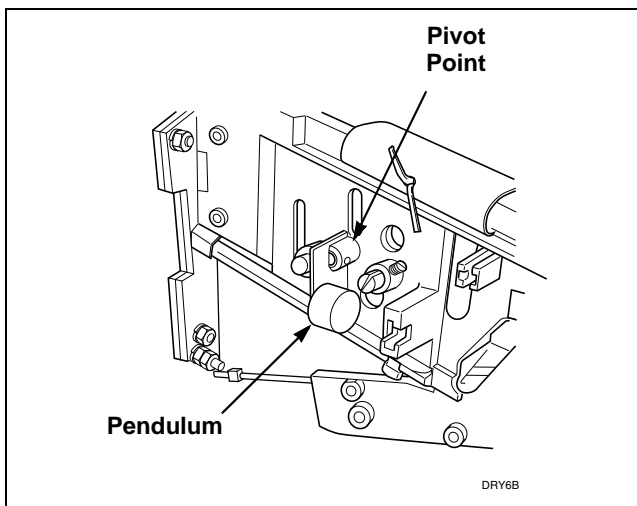


Figure 60

- j. Check coin drop sensor for dust or dirt on eyes. Wipe eyes with dry cotton swab. Refer to *Figure 61*.

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

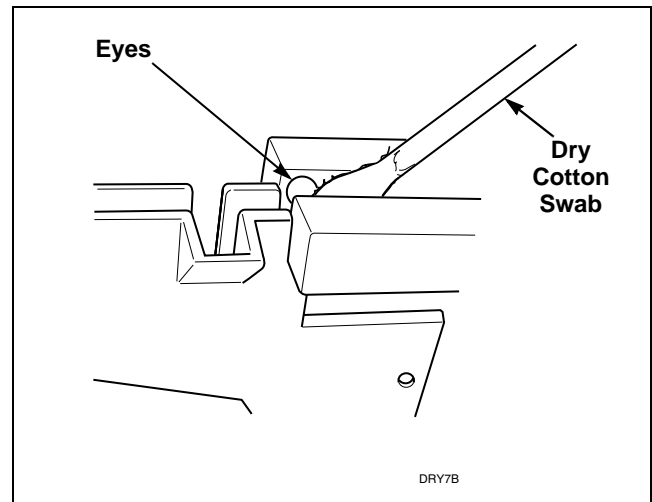


Figure 61

- Reinstall coin return on to coin drop frame.
 - Reinstall metal clip and slide towards coin insert slot. All cotter pin holes must line up.
- Reinstall cotter pin.
- 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.
- Reinstall coin drop into machine. Refer to *Paragraph 34*.
- Reconnect electrical power to machine and drop.
- 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

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.
- Motor not grounded! Disconnect electric power before servicing motor.

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59. 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 62*.

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

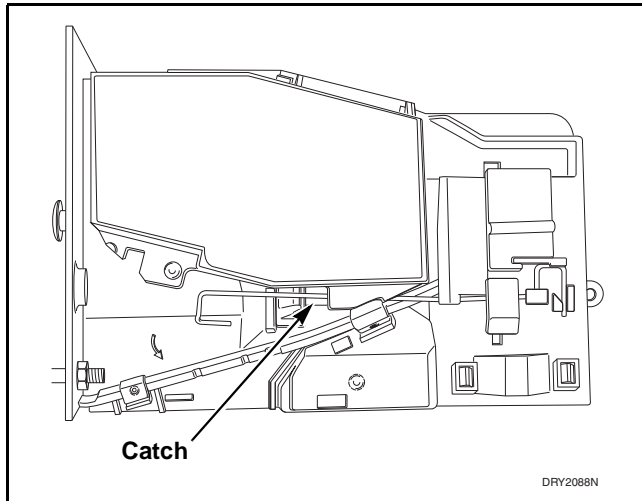


Figure 62

- Open cover for coin drop. Refer to *Figure 63*.

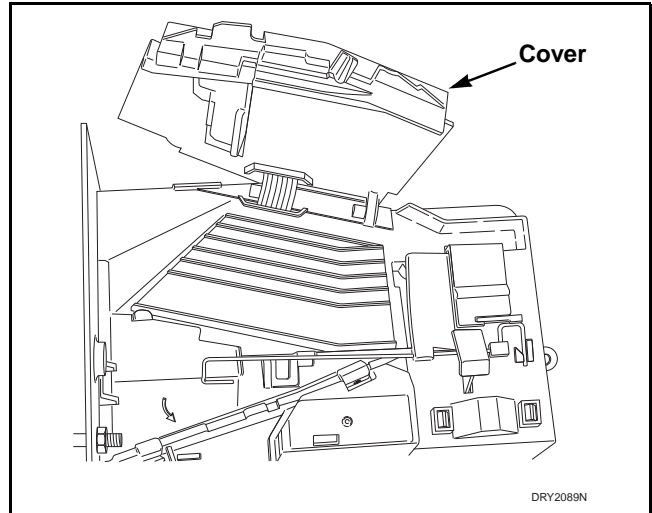


Figure 63

- Clean the coin path with a soft brush and wipe exposed surfaces with an alcohol moistened cloth. Refer to *Figure 64*.

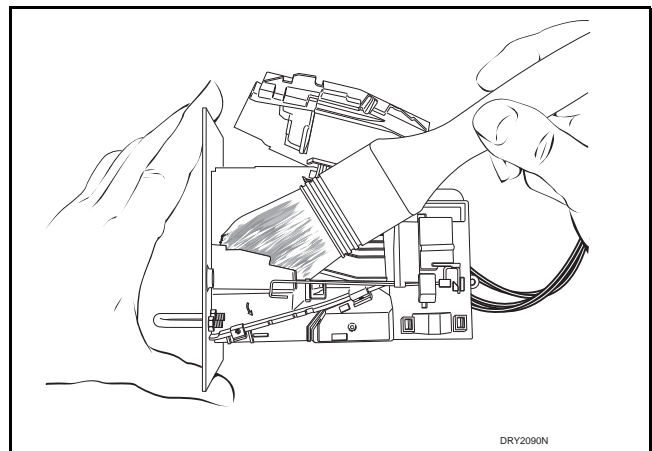


Figure 64



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.
- Motor not grounded! Disconnect electric power before servicing motor.

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- f. Clean residue from coin rail with an alcohol moistened cloth. Refer to *Figure 65*.

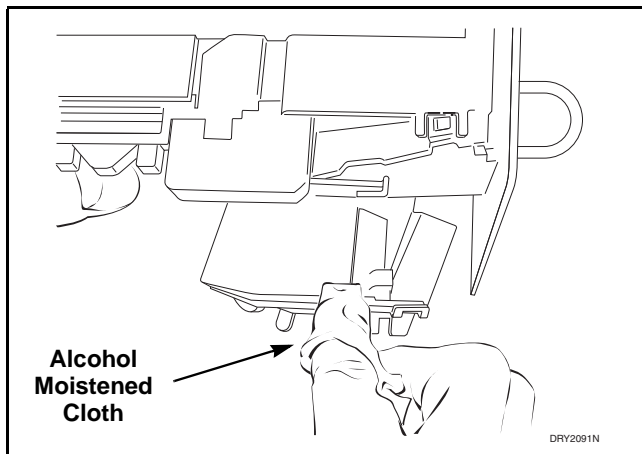


Figure 65

- 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 66*.

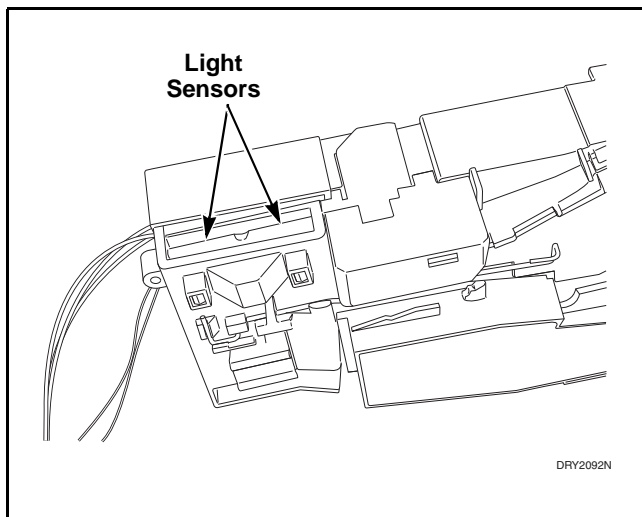


Figure 66

- h. Close cover for coin drop.
 i. Move spring back over cover catch.
 j. Reinstall coin drop into machine.
 k. Reconnect electrical power to machine and drop.