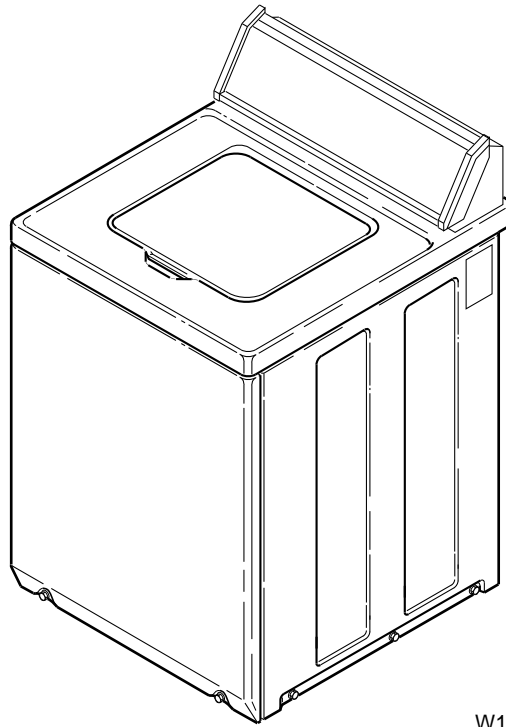


# Automatic Washers

Refer to Page 6 for Model Numbers



W162S



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# Section 1

## Safety Information

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

### **DANGER**

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

### **WARNING**

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

### **CAUTION**

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

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

### **IMPORTANT**

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

### **NOTE**

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

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



## **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

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

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

W003



## WARNING

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

W007



## WARNING

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

W008

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

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

### Locating an Authorized Servicer

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

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

# Section 2

## Introduction

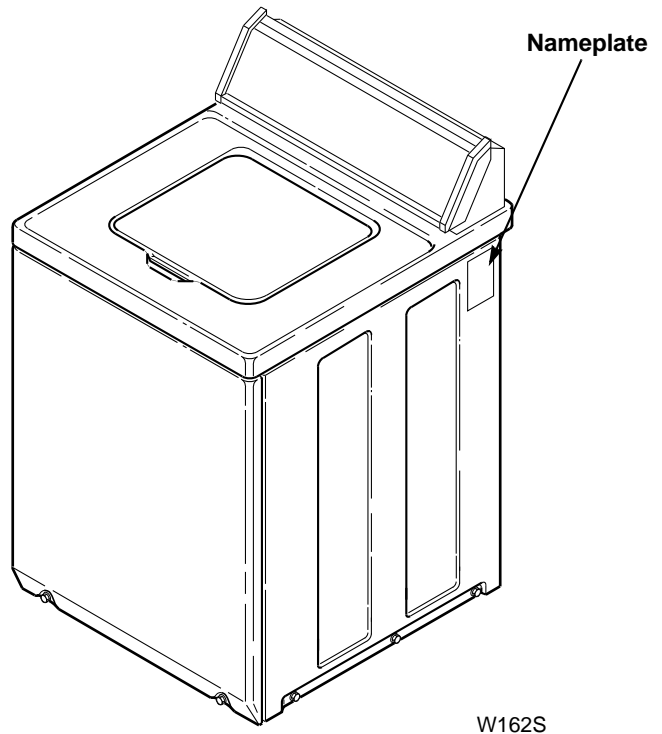
### Customer Service

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

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

### 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.



## Section 2 Introduction

# Model Identification

Information in this manual is applicable to these washer models.

BA4121	BA2411
BA4120	BA2410
BA3110	BA2300



# Section 3

## Troubleshooting



### WARNING

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

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

W003

**IMPORTANT:** Refer to appropriate Wiring Diagram for aid in testing washer components.

#### 1. NO HOT WATER

POSSIBLE CAUSE	TO CORRECT
Hot water supply faucet is closed.	• Open faucet.
Water supply is cold.	• Check water heater.
Kinked hot water inlet hose.	• Straighten or replace hose.
Clogged mixing valve screen, or screen in outer end of inlet hose nearest water supply faucet.	• Disconnect hot water inlet hose, and clean or replace screen.
Inoperative hot water mixing valve solenoid.	• Test solenoid and replace if inoperative.
Inoperative timer.	• Test timer and replace if inoperative.
Inoperative temperature switch.	• Test switch and replace if inoperative.
Inoperative pressure switch.	• Test switch and replace if inoperative.
Clogged pressure hose.	• Remove and clean or replace hose.
Broken, loose or incorrect wiring.	• Refer to appropriate wiring diagram.

#### 2. NO COLD WATER

POSSIBLE CAUSE	TO CORRECT
Cold water supply faucet is closed.	• Open faucet.
Kinked cold water inlet hose.	• Straighten or replace hose.
Clogged mixing valve screen, or screen in outer end of inlet hose nearest water supply faucet.	• Disconnect cold water inlet hose, and clean or replace screen.
Inoperative cold water mixing valve solenoid.	• Test solenoid and replace if inoperative.
Inoperative timer.	• Test timer and replace if inoperative.
Inoperative temperature switch.	• Test switch and replace if inoperative.
Inoperative pressure switch.	• Test switch and replace if inoperative.
Clogged pressure hose.	• Remove and clean or replace hose.
Broken, loose or incorrect wiring.	• Refer to appropriate wiring diagram.



## WARNING

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

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

W003

### 3. NO WARM WATER


POSSIBLE CAUSE	TO CORRECT
No hot water.	<ul style="list-style-type: none"> <li>• Refer to <i>Paragraph 1</i>.</li> </ul>
No cold water.	<ul style="list-style-type: none"> <li>• Refer to <i>Paragraph 2</i>.</li> </ul>

### 4. WATER FILL DOES NOT STOP AT PROPER LEVEL

POSSIBLE CAUSE	TO CORRECT
Inoperative pressure switch.	<ul style="list-style-type: none"> <li>• Test switch and replace if inoperative.</li> </ul>
Air leak in pressure hose.	<ul style="list-style-type: none"> <li>• Replace hose.</li> </ul>
Sediment on or under mixing valve diaphragm, defective diaphragm, or armature binding in armature guide.	<ul style="list-style-type: none"> <li>• Disassemble and clean mixing valve. Replace deteriorated or not easily cleaned components.</li> </ul>
Broken, weak or missing mixing valve armature spring.	<ul style="list-style-type: none"> <li>• Disassemble valve and replace spring.</li> </ul>
A siphoning action started in washer will cause water to be siphoned from washer during cycle due to end of drain hose being lower than cabinet top of washer. Drain hose fits tight in standpipe or drain.	<ul style="list-style-type: none"> <li>• Install No. 562P3 Siphon Break Kit. Provide an air gap around drain hose and drain receptacle.</li> </ul>
Water in pressure hose.	<ul style="list-style-type: none"> <li>• Blow air through hose to remove water.</li> </ul>
Broken, loose, shorted or incorrect wiring.	<ul style="list-style-type: none"> <li>• Refer to appropriate wiring diagram.</li> </ul>

### 5. TIMER DOES NOT ADVANCE (Mechanical Timer Models only)

POSSIBLE CAUSE	TO CORRECT
Timer is designed to pause during fill periods.	<ul style="list-style-type: none"> <li>• Allow completion of fill period.</li> </ul>
Inoperative timer.	<ul style="list-style-type: none"> <li>• Test timer, and replace if inoperative.</li> </ul>
Loading door is open.	<ul style="list-style-type: none"> <li>• Close loading door. Loading door <b>MUST</b> be closed any time the washer is to agitate or spin.</li> </ul>
Washer will not fill.	<ul style="list-style-type: none"> <li>• Timer pauses until pressure switch is satisfied. Refer to <i>Paragraph 1</i> and <i>2</i>.</li> </ul>
Timer motor lead wire off timer terminal.	<ul style="list-style-type: none"> <li>• Refer to appropriate wiring diagram and reattach wire.</li> </ul>
Broken, loose or incorrect wiring.	<ul style="list-style-type: none"> <li>• Refer to appropriate wiring diagram.</li> </ul>

	<h2 style="margin: 0;">WARNING</h2>
<p><b>To reduce the risk of electric shock, fire, explosion, serious injury or death:</b></p> <ul style="list-style-type: none"> <li>• <b>Disconnect electric power to the washer before servicing.</b></li> <li>• <b>Never start the washer with any guards/panels removed.</b></li> <li>• <b>Whenever ground wires are removed during servicing, these ground wires must be reconnected to ensure that the washer is properly grounded.</b></li> </ul>	
W003	

**6. NO AGITATION**

POSSIBLE CAUSE	TO CORRECT
Inoperative timer. Timer is designed to pause (SOAK) during DELICATE cycle.	<ul style="list-style-type: none"> <li>• Test timer and replace if inoperative.</li> </ul>
Inoperative motor.	<ul style="list-style-type: none"> <li>• Test motor and replace if inoperative.</li> </ul>
Inoperative pressure switch.	<ul style="list-style-type: none"> <li>• Test switch and replace if inoperative.</li> </ul>
Broken, loose or incorrect wiring.	<ul style="list-style-type: none"> <li>• Refer to appropriate wiring diagram.</li> </ul>
Loose or broken drive belt.	<ul style="list-style-type: none"> <li>• Adjust or replace belt.</li> </ul>
Inoperative transmission assembly.	<ul style="list-style-type: none"> <li>• Repair or replace transmission assembly.</li> </ul>
Sheared motor pulley roll pin.	<ul style="list-style-type: none"> <li>• Remove drive motor and replace roll pin and any other damaged parts.</li> </ul>
Drive motor overload protector has cycled.	<ul style="list-style-type: none"> <li>• Refer to <i>Paragraph 10</i>.</li> </ul>
Bind in pump.	<ul style="list-style-type: none"> <li>• Replace pump.</li> </ul>
Loading door is open or door switch is inoperative.	<ul style="list-style-type: none"> <li>• Close door or test switch and replace if inoperative.</li> </ul>

**7. CONSTANT AGITATION**

POSSIBLE CAUSE	TO CORRECT
Inoperative timer.	<ul style="list-style-type: none"> <li>• Test timer and replace if inoperative.</li> </ul>
Inoperative drive motor.	<ul style="list-style-type: none"> <li>• Test motor and replace if inoperative.</li> </ul>
Shorted or incorrect wiring.	<ul style="list-style-type: none"> <li>• Refer to appropriate wiring diagram.</li> </ul>
Inoperative transmission assembly.	<ul style="list-style-type: none"> <li>• Repair or replace transmission assembly.</li> </ul>



## WARNING

- To reduce the risk of electric shock, fire, explosion, serious injury or death:**
- **Disconnect electric power to the washer before servicing.**
  - **Never start the washer with any guards/panels removed.**
  - **Whenever ground wires are removed during servicing, these ground wires must be reconnected to ensure that the washer is properly grounded.**

W003

### 8. SLOW SPIN OR NO SPIN


POSSIBLE CAUSE	TO CORRECT
Inoperative timer.	<ul style="list-style-type: none"> <li>• Test timer and replace if inoperative.</li> </ul>
On some model washers, the timer is programmed for SLOW spin in the DELICATE CYCLE regardless of the action switch setting.	<ul style="list-style-type: none"> <li>• Use a different cycle.</li> </ul>
Loading door is open or door safety switch is inoperative.	<ul style="list-style-type: none"> <li>• Close loading door, or test switch and replace if inoperative.</li> </ul>
Bind in water pump.	<ul style="list-style-type: none"> <li>• Replace pump.</li> </ul>
Inoperative drive motor.	<ul style="list-style-type: none"> <li>• Test motor and replace if inoperative.</li> </ul>
Loose or broken drive belt.	<ul style="list-style-type: none"> <li>• Adjust or replace spin belt.</li> </ul>
Washer has gone out of balance.	<ul style="list-style-type: none"> <li>• Open loading door to reset out-of-balance switch. Rearrange load in washtub.</li> </ul>
No clearance or stuck brake pads.	<ul style="list-style-type: none"> <li>• Free sticky brake pads or replace pads.</li> </ul>
Broken, loose or incorrect wiring.	<ul style="list-style-type: none"> <li>• Refer to appropriate wiring diagram.</li> </ul>
Inoperative transmission assembly.	<ul style="list-style-type: none"> <li>• Repair or replace the transmission assembly.</li> </ul>

### 9. CONSTANT SPIN

POSSIBLE CAUSE	TO CORRECT
Inoperative timer.	<ul style="list-style-type: none"> <li>• Test timer and replace if inoperative.</li> </ul>
Inoperative drive motor.	<ul style="list-style-type: none"> <li>• Test motor and replace if inoperative.</li> </ul>
Excessive wear on brake pads, or missing brake pads.	<ul style="list-style-type: none"> <li>• Replace brake pads.</li> </ul>
Shorted or incorrect wiring.	<ul style="list-style-type: none"> <li>• Refer to appropriate wiring diagram.</li> </ul>

### 10. DRIVE MOTOR OVERLOAD PROTECTOR CYCLES REPEATEDLY

POSSIBLE CAUSE	TO CORRECT
Excessive belt tension.	<ul style="list-style-type: none"> <li>• Adjust belts.</li> </ul>
Inoperative motor overload protector.	<ul style="list-style-type: none"> <li>• Replace motor.</li> </ul>
Bind in water pump.	<ul style="list-style-type: none"> <li>• Replace pump.</li> </ul>
Bind in transmission.	<ul style="list-style-type: none"> <li>• Repair or replace transmission.</li> </ul>
Brake pads binding.	<ul style="list-style-type: none"> <li>• Free binding pads, or replace pads.</li> </ul>
Incorrect voltage.	<ul style="list-style-type: none"> <li>• Contact local utility company, or have a qualified electrician check power supply.</li> </ul>

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

**11. OUTER TUB DOES NOT EMPTY**

POSSIBLE CAUSE	TO CORRECT
Kinked drain hose.	<ul style="list-style-type: none"> <li>• Straighten hose.</li> </ul>
Inoperative water pump.	<ul style="list-style-type: none"> <li>• Replace pump.</li> </ul>
Obstruction in outer tub outlet hose.	<ul style="list-style-type: none"> <li>• Remove obstruction.</li> </ul>
Loose or broken pump belt.	<ul style="list-style-type: none"> <li>• Adjust or replace belt.</li> </ul>

**12. EXCESSIVE VIBRATION**

POSSIBLE CAUSE	TO CORRECT
Unbalanced load in tub.	<ul style="list-style-type: none"> <li>• Stop washer, redistribute load, then restart washer.</li> </ul>
Broken, disconnected or centering spring(s) out of adjustment.	<ul style="list-style-type: none"> <li>• Connect or replace centering spring(s). Spring should be located in center notch. Refer to <i>Figure 60</i>.</li> </ul>
Washer is not properly leveled.	<ul style="list-style-type: none"> <li>• Adjust leveling legs.</li> </ul>
Washer is installed on weak, “spongy” or built-up floor.	<ul style="list-style-type: none"> <li>• Relocate washer, or support floor to eliminate weak or “spongy” condition.</li> </ul>
Incorrect or loose cabinet screws.	<ul style="list-style-type: none"> <li>• Replace with correct screws or tighten.</li> </ul>
Base damaged (washer was dropped).	<ul style="list-style-type: none"> <li>• Replace base assembly.</li> </ul>
Balance ring not positioned properly on transmission assembly.	<ul style="list-style-type: none"> <li>• Refer to <i>Paragraph 51</i>.</li> </ul>

**13. WATER LEAKING FROM OUTER TUB**

POSSIBLE CAUSE	TO CORRECT
Leaking water seal in outer tub.	<ul style="list-style-type: none"> <li>• Replace hub and seal kit assembly, <i>Paragraph 44</i>.</li> </ul>
Hole in outer tub.	<ul style="list-style-type: none"> <li>• Replace outer tub.</li> </ul>
Pressure hose or accumulator leaking.	<ul style="list-style-type: none"> <li>• Replace pressure hose and/or accumulator.</li> </ul>
Outer tub cover gasket leaking.	<ul style="list-style-type: none"> <li>• Replace gasket.</li> </ul>
Tub-to-pump hose leaking at clamp.	<ul style="list-style-type: none"> <li>• Tighten clamp.</li> </ul>



# Section 4 Grounding



## WARNING

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

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

W003

### 14. WALL RECEPTACLE POLARITY CHECK

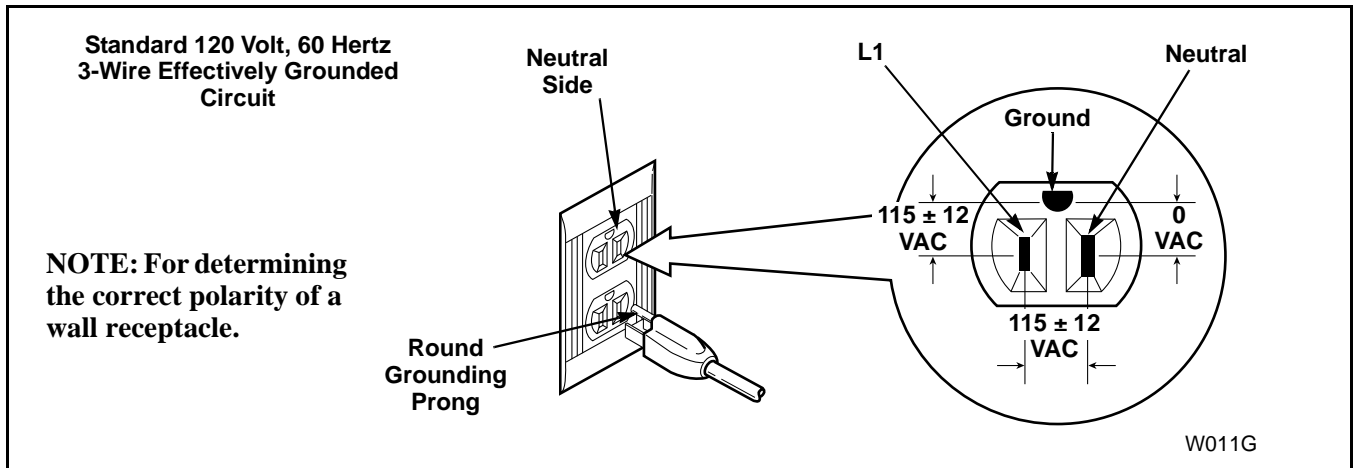


Figure 1

### 15. POWER CORD TO CABINET TOP, CABINET TOP TO CONTROL HOOD MOUNTING BRACKET, PRESSURE SWITCH MOUNTING BRACKET AND GROUND TAB ON GRAPHIC PANEL (Models BA4121, BA4120 and BA3110)

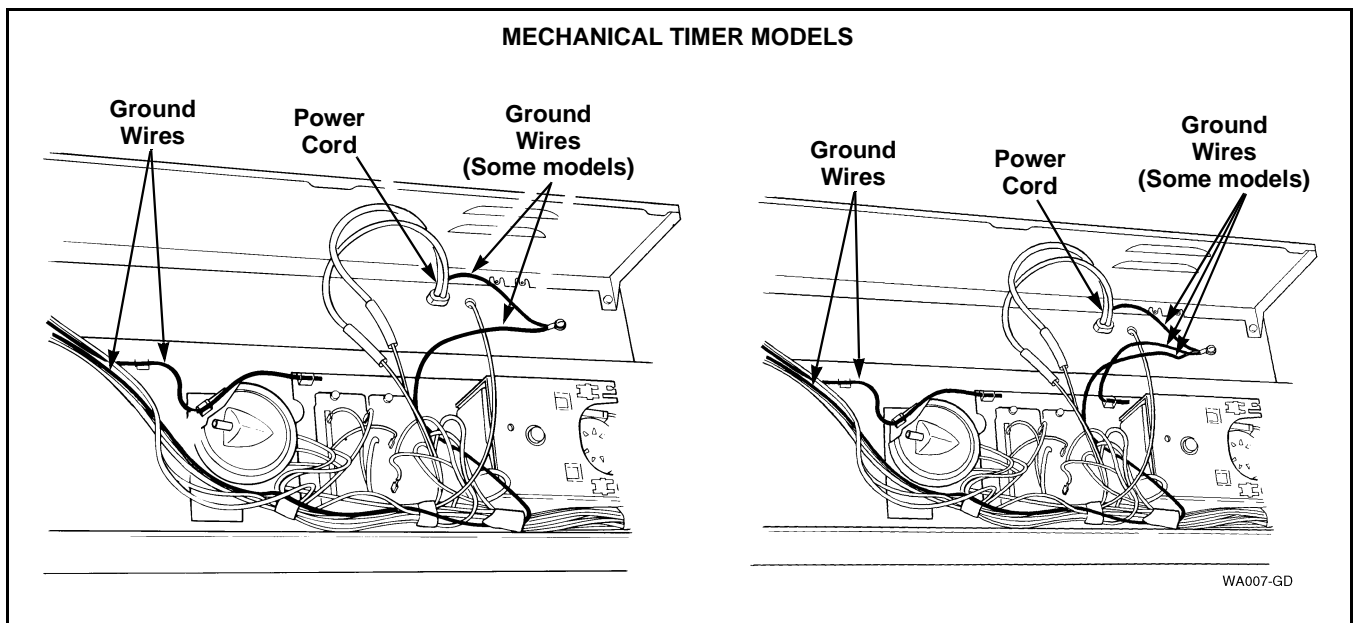


Figure 2



## WARNING

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

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

W003

### 16. POWER CORD TO CONTROL HOOD (Models BA2411, BA2410 and BA2300)

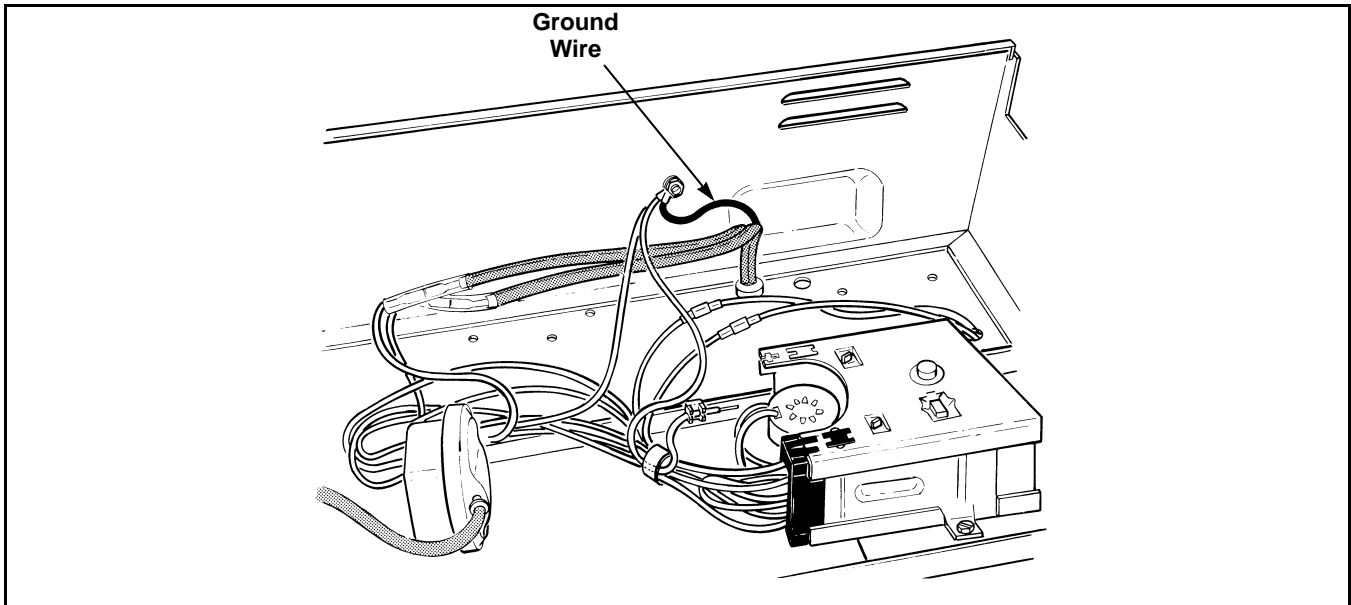


Figure 3

### 17. CONTROL HOOD TO BOTTOM FLANGE OF CONTROL PANEL (Models BA2411, BA2410 and BA2300)

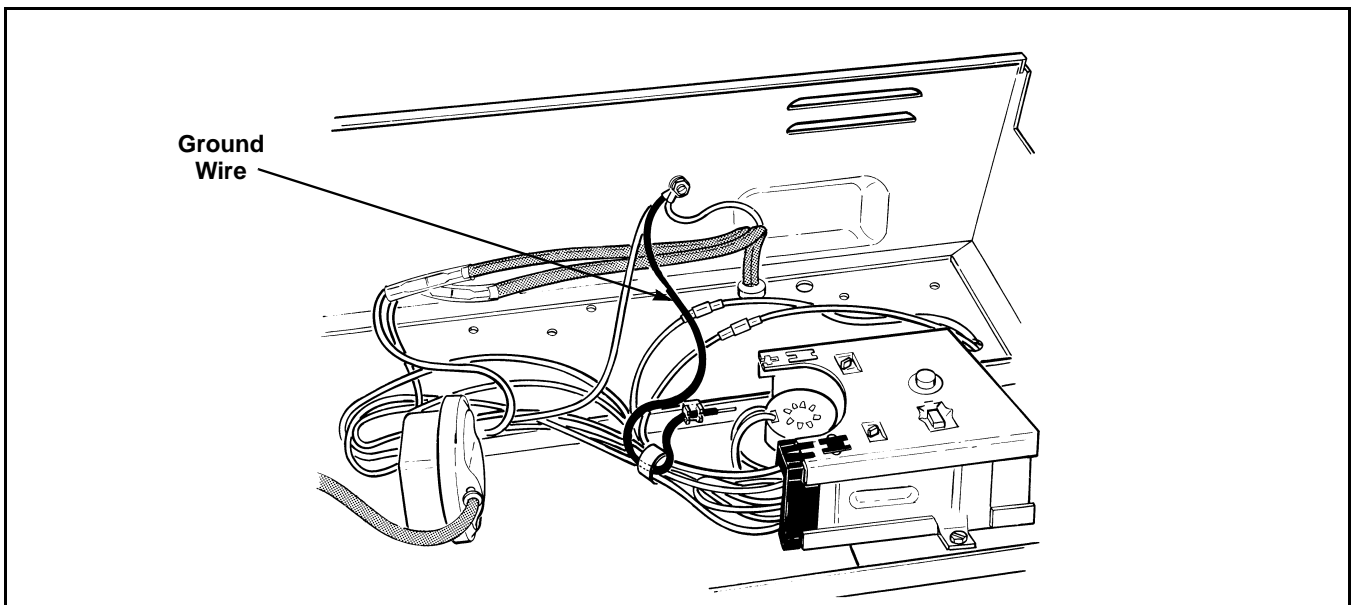


Figure 4





## 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.

W003

### 18. MAIN WIRE HARNESS TO TOP REAR CORNER GUSSET OF CABINET

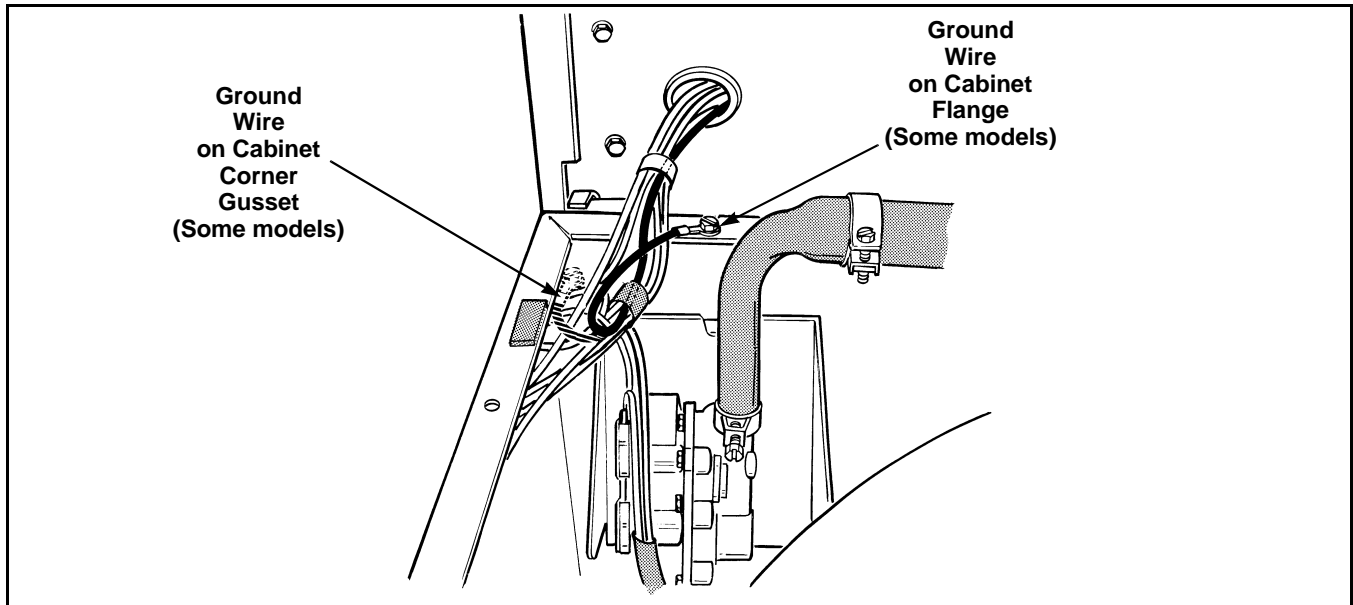


Figure 5

### 19. MOTOR TO MOUNTING BRACKET TO BASE

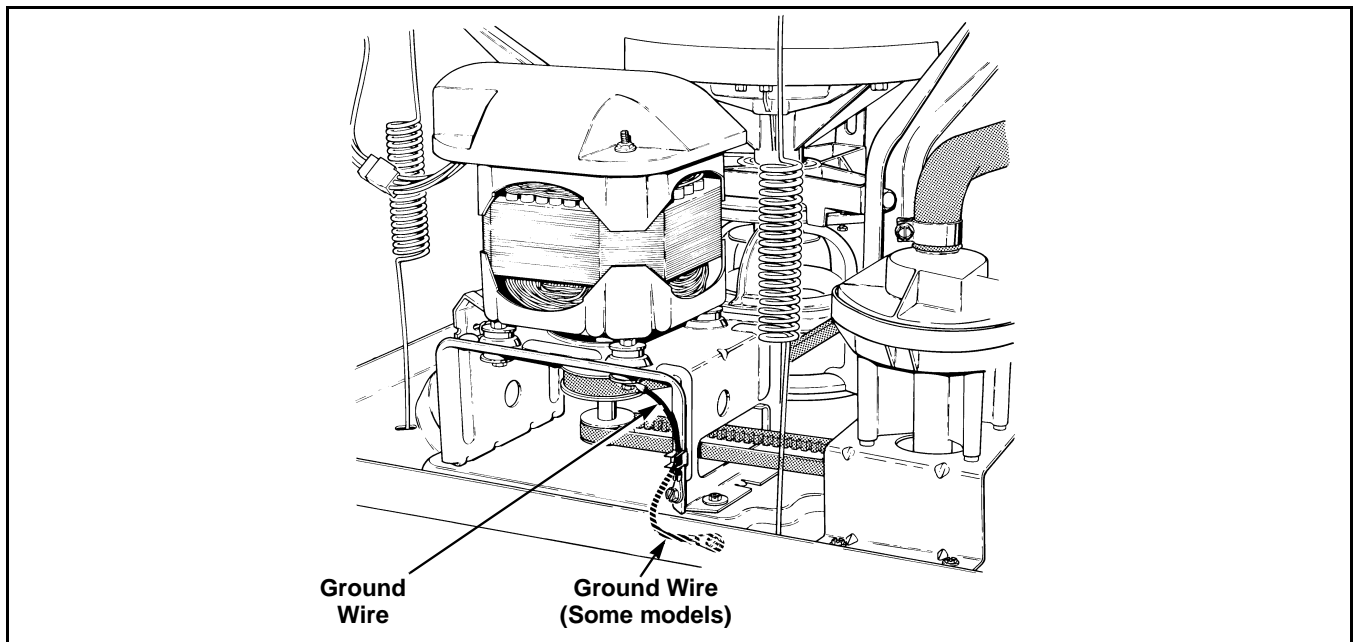


Figure 6

# Notes

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# Section 5

## Service Procedures



### WARNING

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

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

W003

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

- b. Disconnect wires from component parts and carefully remove components from control hood assembly.

### 20. CONTROL HOOD ASSEMBLY (Models BA4121, BA4120 and BA3110)

Refer to *Figure 7*.

- a. Remove six screws (3 on top and 3 at lower front) holding hood assembly to control hood rear panel and cabinet top.

**NOTE:** Refer to appropriate wiring diagram when rewiring component parts.

### TO REMOVE CONTROL HOOD END CAPS

Remove end caps by carefully prying caps out of slots in ends of hood.

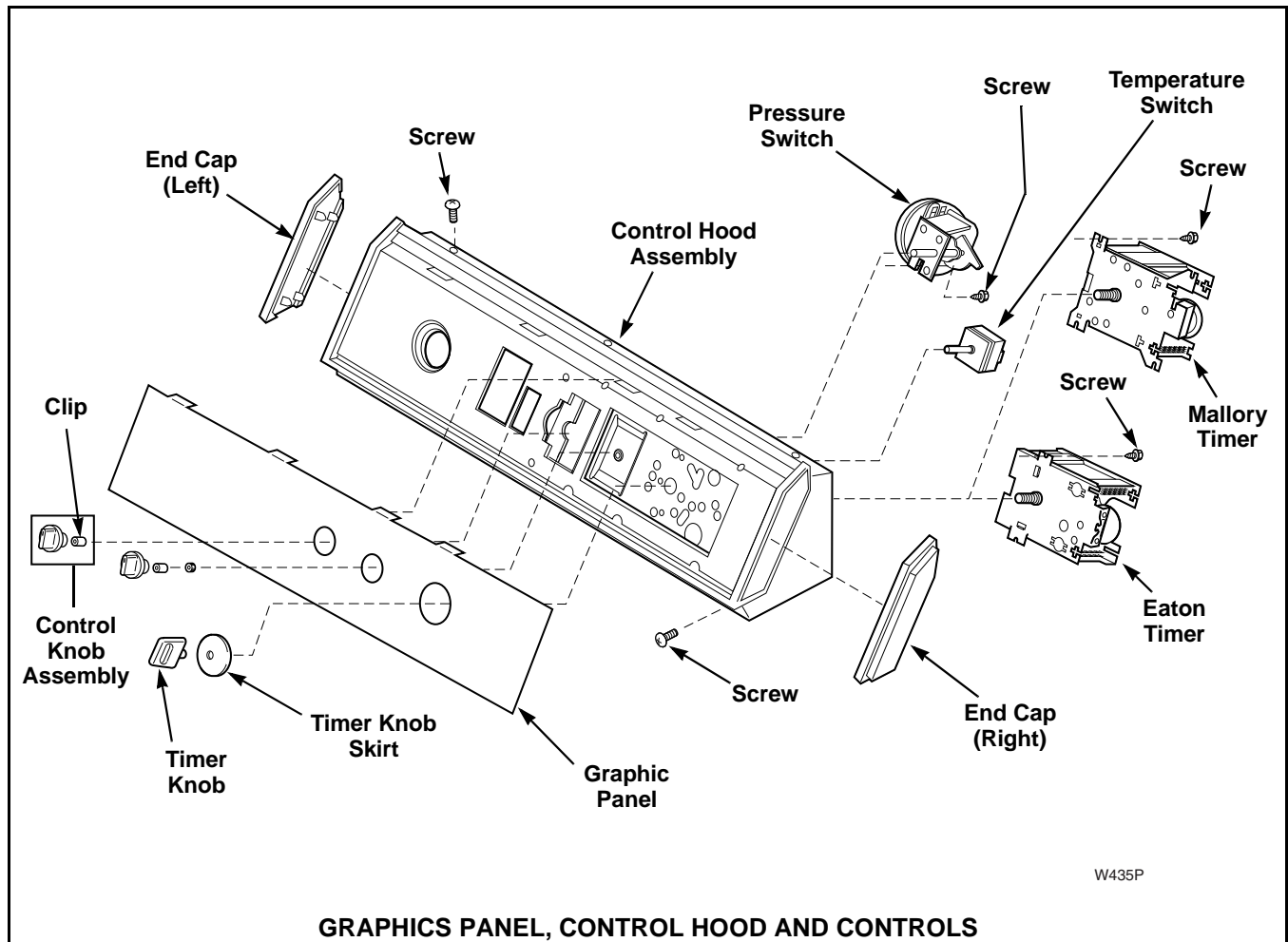


Figure 7



## WARNING

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

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

W003

### 21. CONTROL PANEL (Models BA2411, BA2410 and BA2300)

Refer to *Figure 8*.

- a. Remove panel assembly screws and lift assembly off panel support.
- b. Remove end caps.
- c. Remove timer knob assembly.

**NOTE:** When reinstalling timer knob assembly, pin in timer shaft must be positioned in slot timer knob indicator.

- d. Pull knobs off temperature and speed (action) switches (if present), and remove knurled nuts and lockwashers holding switches to control panel.

**NOTE:** Lockwashers must be between switch and control panel when installing switch.

- e. Pull knob off pressure switch and remove screws holding switch to control panel.
- f. Remove screws holding timer to control panel.

**NOTE:** When installing timers, shown in *Figure 8*, the horizontal and vertical tabs on front plate of timer must seat completely into the “cross shaped” holes on the control panel bracket, *Figure 8*, and that the two timer hex head attaching screws are torqued down between 12 and 18 inch pounds (14 to 21 cm-kg).

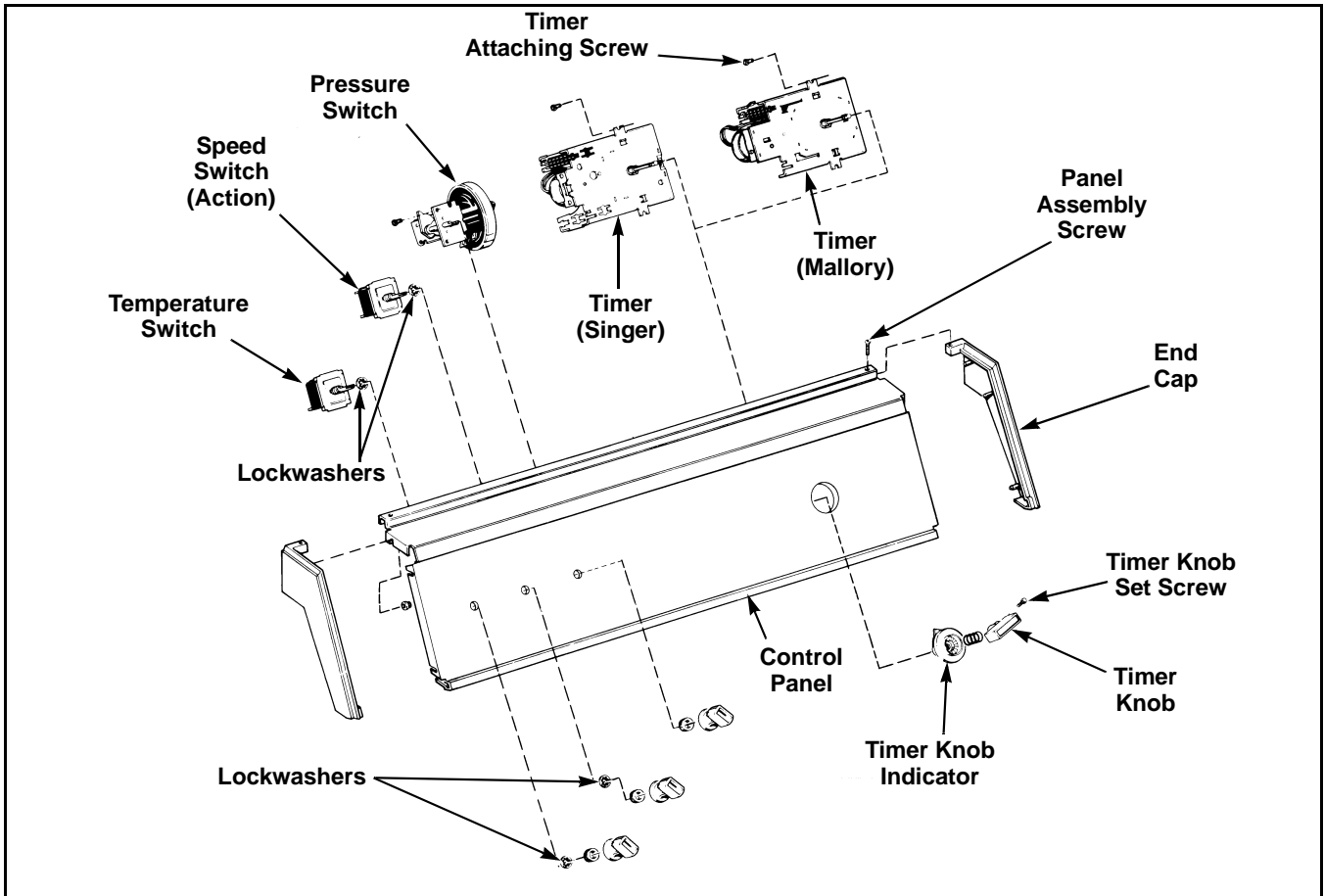


Figure 8



## WARNING

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

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

W003

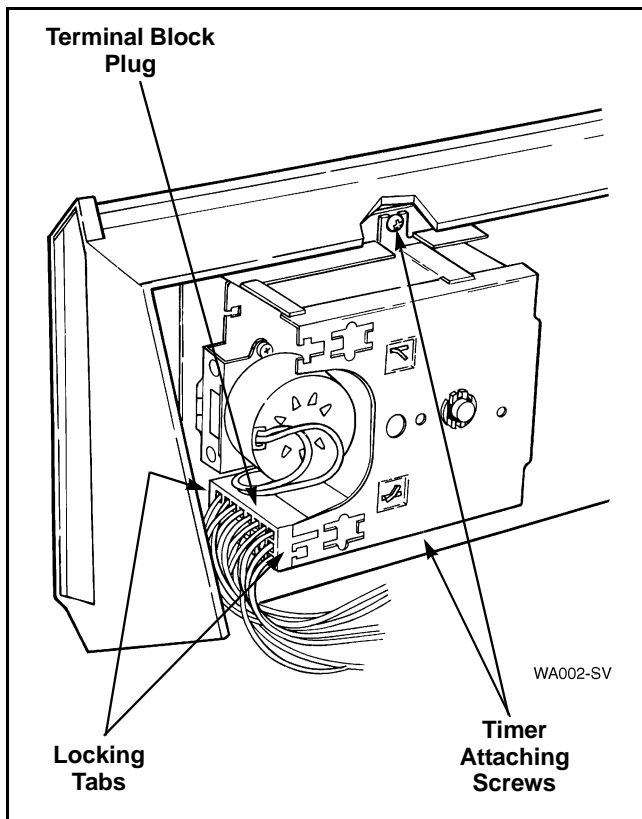


Figure 9

### 22. TIMER (Models BA4121, BA4120 and BA3110)

Refer to *Figure 7*.

- Remove six screws (3 on top and 3 at lower front) holding hood assembly to control hood rear panel and cabinet top.
- Unscrew timer knob from timer shaft (right hand thread), then remove timer knob skirt.
- Remove two screws holding timer to control hood mounting plate. Refer to *Figure 9*.

**NOTE: DO NOT attempt to repair timer.**

- Disengage wire harness terminal block plug(s) from timer by pressing in on movable locking tabs (located on each side of terminal block plug) and pulling away from timer. Refer to *Figure 9*.

**IMPORTANT:** To avoid an open circuit, **DO NOT** pull on terminal block wires when removing blocks from timer as this could damage wires or terminal crimping.

Before attaching wire harness terminal blocks to timer, make sure all male terminals on timer are straight and are capable of accepting terminals from wire harness terminal blocks.

**NOTE:** When installing timer, be sure timer is installed correctly and is securely mounted to bracket on control hood. Refer to *Figure 10*.

- The horizontal and vertical tabs on front plate of timer must seat completely into the slots on the control hood mounting bracket, and that the two screws are torqued down between 12 and 18 inch pounds (14 to 21 cm-kg).

**IMPORTANT:** To avoid timer damage, do not allow timer to be struck on corners, edges of frame, or on timer shaft.

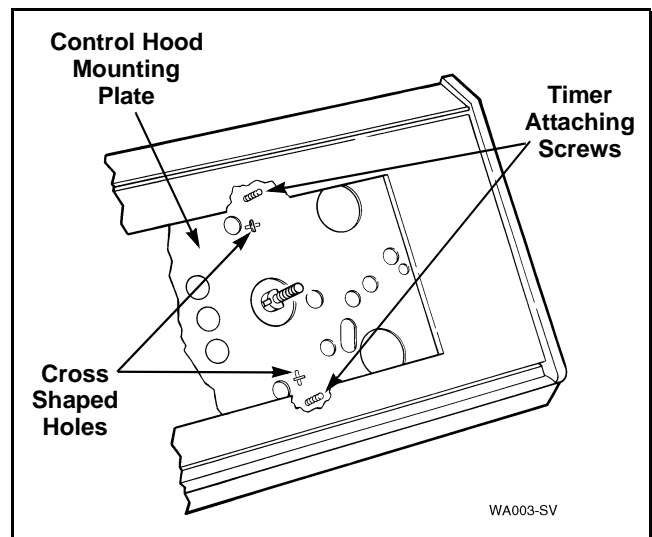


Figure 10



## 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.

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### 23. TIMER (Models BA2411, BA2410 and BA2300)

Refer to *Figure 8*.

- Remove panel assembly screws and lift assembly off panel support.
- Loosen setscrew holding timer knob to timer shaft, then remove knob, spring and timer knob indicator.

**NOTE: DO NOT attempt to repair timer.**

- Disengage wire harness terminal block plug(s) from timer by pressing in on movable locking tabs (located on each side of terminal block plug) and pulling away from timer. Refer to *Figure 11*.

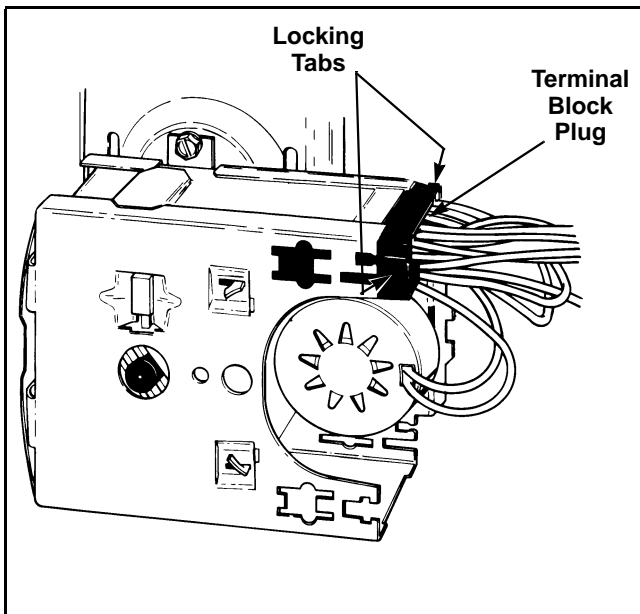


Figure 11

**IMPORTANT: To avoid an open circuit, DO NOT pull on terminal block wires when removing blocks from timer as this could damage wires or terminal crimping.**

**Before attaching wire harness terminal block to timer, make sure all male terminals on timer are straight and are capable of accepting terminals from wire harness terminal block.**

- Remove the two hex head screws holding timer to rear of control panel bracket.

**NOTE: When installing timer, be sure timer is installed correctly and is securely mounted to bracket on control hood. Refer to *Figure 8*.**

- The horizontal and vertical tabs on front plate of timer must seat completely into the cross-shaped holes on the control hood mounting bracket. Torque down the screws between 12 and 18 inch pounds (14 to 21 cm-kg).

**IMPORTANT: To avoid timer damage, do not allow timer to be struck on corners, edges of frame, or on timer shaft.**

### 24. TEMPERATURE SWITCH OR SPEED (ACTION) SWITCH

Refer to *Figure 7* or *8* for switch removal, depending on model.

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

### 25. PRESSURE SWITCH

Refer to *Figure 7* or *8* for switch removal, depending on model.

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

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

**When the pressure hose has been removed and replaced several times, the end of the hose may become enlarged, and does not seal properly.**

**If hose is enlarged, cut approximately 1/2" to 3/4" off the end of the hose and reinstall hose on pressure switch.**



## WARNING

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

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

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### 26. GRAPHIC PANEL (Models BA4121, BA4120 and BA3110)

Refer to *Figure 7*.

- a. Remove six screws (3 on top and 3 at lower front) holding hood assembly to control hood rear panel and cabinet top.
- b. Disconnect wires from component parts and carefully remove components from control hood assembly.

**NOTE: Refer to appropriate wiring diagram when rewiring component parts.**

- c. Bend tabs on graphic panel (located inside of control hood) straight out toward rear of hood.
- d. Carefully remove graphic panel off front of control hood.

### 27. LOADING DOOR

Refer to *Figure 12*.

- a. Depress tab on either hinge, then slide hinge out of loading door and bushing in cabinet.
- b. Tilt loading door slightly and slide door and hinge out of opposite bushing.

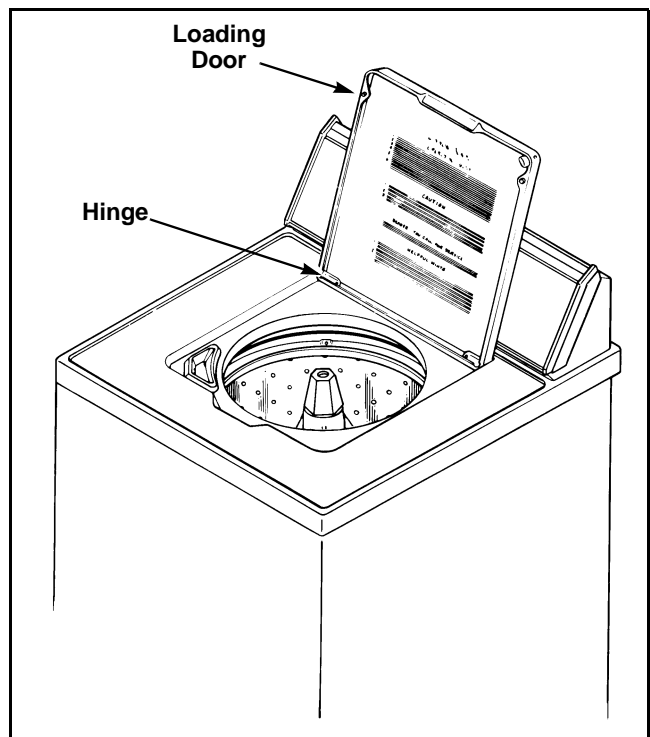


Figure 12



## 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.

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### 28. AGITATOR (Short Post Models)

- a. Open loading door.
- b. To remove agitator by hand, place two agitator hooks, No. 254P4P, under bottom edge of agitator. Refer to *Figure 13*.

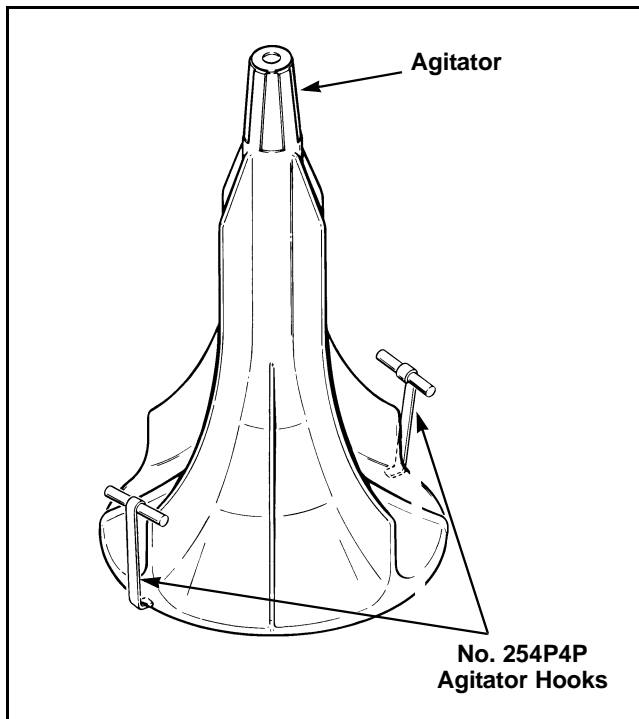


Figure 13

**IMPORTANT:** Hooks should be positioned 180° of each other, and must be placed under agitator fin for greater stability. If hooks are placed between the fin area, damage to agitator may occur.

- c. Using a rocking motion (back and forth) carefully lift agitator off drive bell.

### 29. AGITATOR, DRIVE BELL AND SEAL SEAT ASSEMBLY (Short Post Models)



## WARNING

To reduce the risk of electric shock or injury to persons, disconnect the washer power cord before servicing the washer. If water is present in the washtub, spin and pump out before attempting to remove the drive bell and seal seat assembly.

- a. Open loading door.
- b. To remove agitator by hand, place two agitator hooks, No. 254P4P, under bottom edge of agitator. Refer to *Figure 13*.

**IMPORTANT:** Hooks should be positioned 180 degrees of each other, and must be placed under agitator fin for greater stability. If hooks are placed between the fin area, damage to agitator may occur.

- c. Using a rocking motion (back and forth) carefully lift agitator off drive bell.
- d. Remove the screw and o-ring washer from the top side of the drive bell.

**NOTE:** To remove the drive bell from the transmission shaft will require using the No. 294P4 Drive Bell Tool. Refer to *Figure 14*.

- e. Back bolt out of tool approximately three quarters of the way.
- f. Place tool over the bell, making sure indent on jaw lines up with wide slots on the bell. Refer to *Figure 15*.
- g. Screw the bolt down through hole in top of bell until bolt bottoms out in the hole in the transmission shaft.
- h. Place lip of each jaw under bottom edge of drive bell, making sure indent on jaw lines up with wide slots on bell. Then tighten the two wing nuts to hold jaws firmly against drive bell. Refer to *Figure 15*.





## WARNING

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

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

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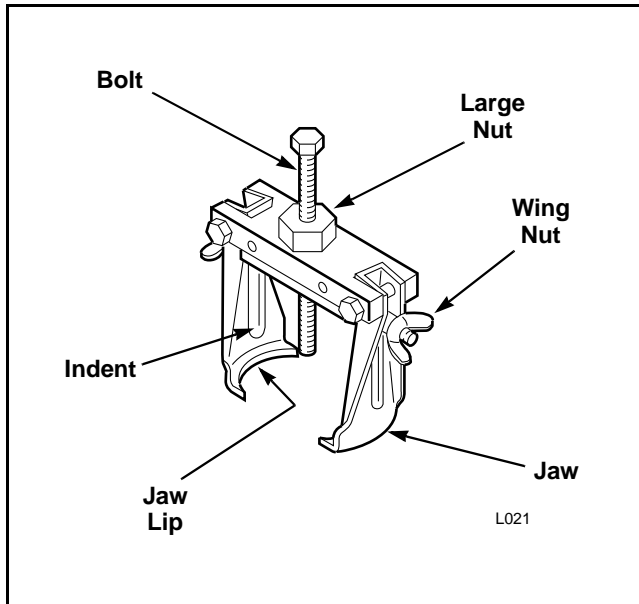


Figure 14

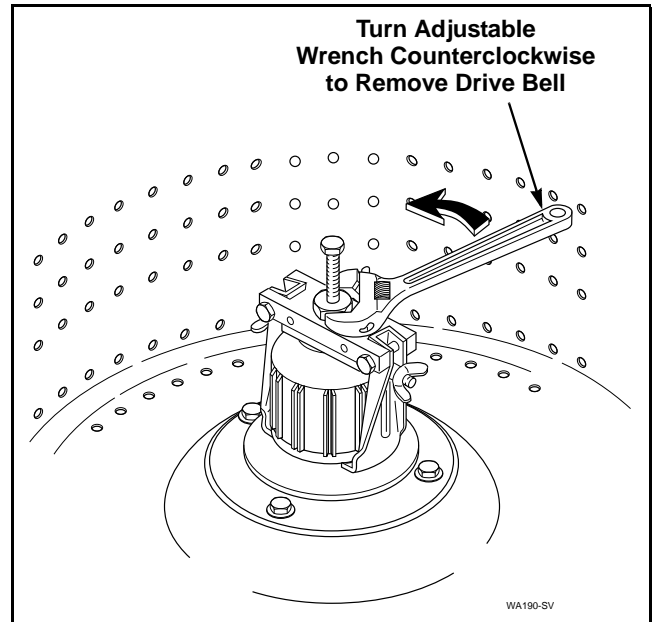


Figure 16

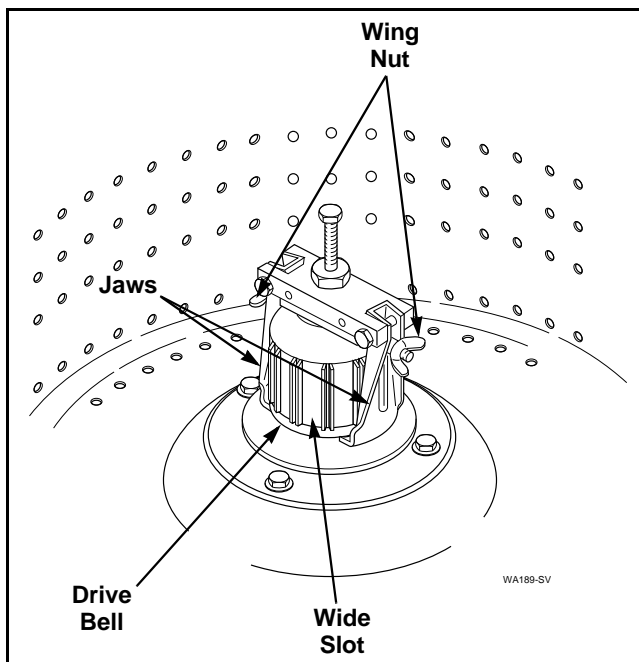


Figure 15

- Use an adjustable wrench and turn the large nut on tool **COUNTERCLOCKWISE** to pull drive bell from transmission output shaft. Refer to *Figure 16*.

**IMPORTANT:** If large nut is turned clockwise when pulling drive bell, you will twist off the 1/4 inch bolt.

- Turn the 1/4 inch bolt out of transmission shaft and remove tool and drive bell from washer.
- Loosen the two wing nuts and remove drive bell from tool.
- Carefully pry the old seal out of the drive bell and clean any foreign materials from the bell.

**IMPORTANT:** We recommend that both the seal seat and the seal head be replaced together in pairs. **DO NOT** replace only one of the two.

- Install the new seal into the drive bell.
- Remove the seal head from the hub and clean any foreign material from the hub seal mounting area.



## WARNING

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

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

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- o. Place the new seal head on hub and carefully push the seal head into position. Make sure the seal is pressed down against the shoulder on the hub.

**NOTE:** Soapy water will aid in the assembly of the seal onto the hub.

**IMPORTANT:** Make sure the seal is pressed down against the shoulder on the hub.

**IMPORTANT:** DO NOT apply any type of lubricants to the sealing surfaces of either the seal seat or seal head as you will damage the seals.

### TO REINSTALL DRIVE BELL

- a. Position drive bell over transmission shaft. Rotate drive bell until splines in drive bell line up with splines on transmission shaft.
- b. Place No. 294P4 Bell Tool over top of bell. Screw bolt into transmission shaft until it bottoms out.

**NOTE:** It is not necessary to use the tool jaws on drive bell during this operation.

- c. Use an adjustable wrench and turn large nut on tool **CLOCKWISE** to force drive bell down onto transmission shaft until bell bottoms out on shaft.
- d. Turn bolt out of transmission shaft and remove tool.
- e. Place new o-ring gasket onto new screw. Thread the new screw down through hole in top of drive bell and into transmission shaft. **DO NOT reuse the old screw and o-ring gasket!**

**NOTE:** Torque new screw down between **45 and 55 inch pounds (52 to 63 cm-Kg)**. Over torque will mushroom the plastic bell.

- f. Place agitator on top of drive bell. Slowly rotate agitator until fingers on underside of agitator line up with large slots on drive bell.

- g. A sharp blow on top of agitator, with palm of your hand, will force agitator down onto drive bell, allowing fingers on underside of agitator to lock under bottom edge of drive bell.

**NOTE:** Do not push agitator onto drive bell any further than necessary.

### 30. AGITATOR POST ASSEMBLY (Long Post Models)

**IMPORTANT:** If water is present in washtub, spin and pump out before removing agitator post assembly.

- a. Remove agitator hold-down cap and lift agitator out of washtub. Refer to *Figure 17*.

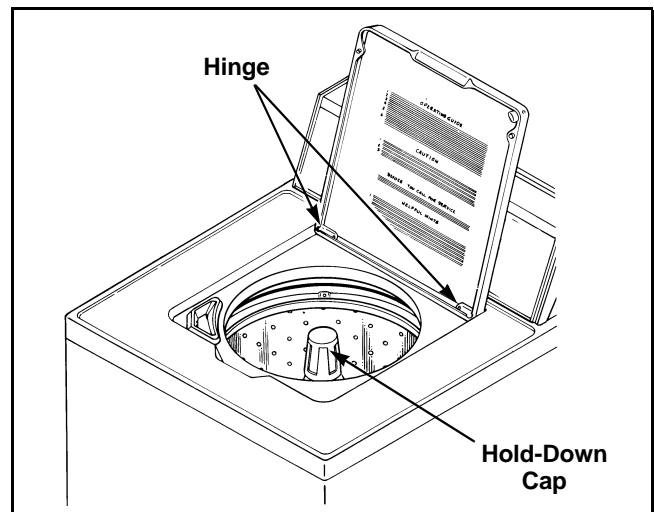


Figure 17

- b. Remove four cap screws holding agitator post assembly to washtub hub, then lift assembly out of washtub. Refer to *Figure 18*.

**NOTE:** Models equipped with gasket – Use a new gasket when installing agitator post. (Be sure all traces of old gasket are removed from the hub and agitator post.) Apply a small bead of sealant, No. 27615, to each of the sealing surfaces where the agitator post gasket will contact the hub. Carefully place new gasket on hub. Be sure holes in gasket are aligned with bolt holes in hub.



## WARNING

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

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

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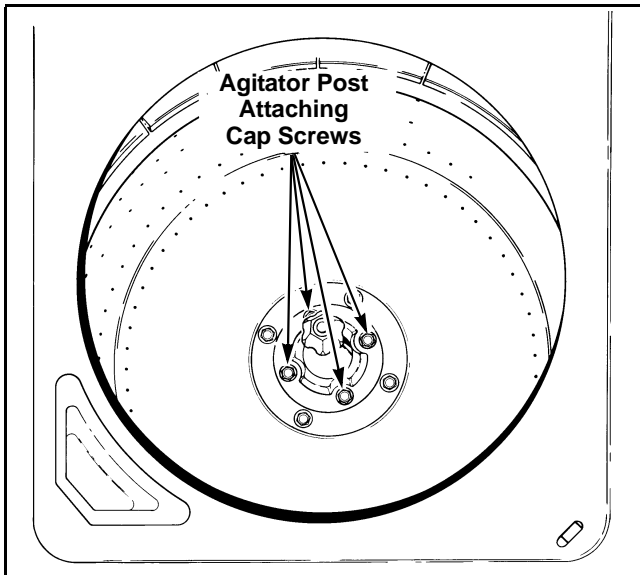


Figure 18

**NOTE: Models equipped with Loctite – Be sure all traces of old loctite are removed from the hub and agitator post. Apply approximately a 1/16 inch diameter continuous bead of Loctite to the embossed surfaces of the agitator post. Refer to *Figure 19*.**

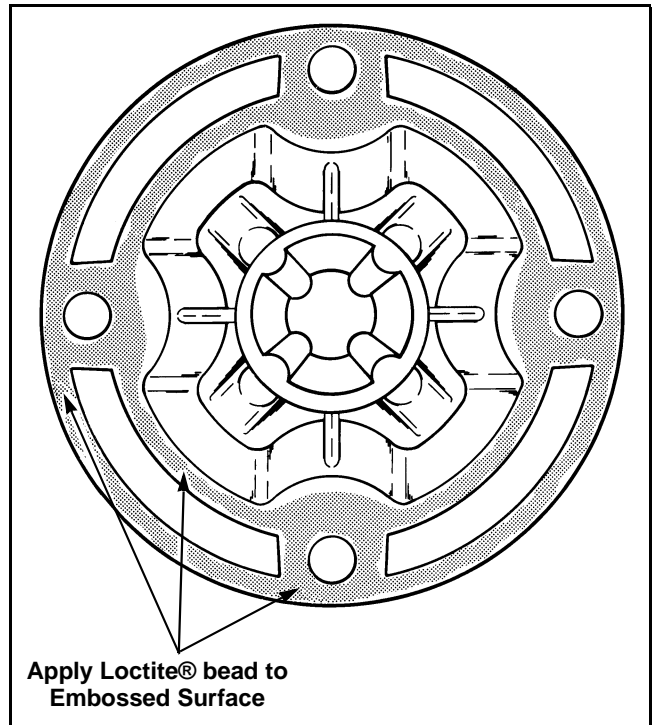



Figure 19

- c. While tightening the four cap screws, tap lightly on the drive block to force splines on drive shaft into the coupling on the transmission assembly.


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

Refer to *Figure 20*.

- a. Remove agitator post assembly. Refer to *Paragraph 30*.
- b. Remove retainer ring from bottom end of drive shaft, grasp agitator drive block and pull shaft out of agitator post.

**IMPORTANT:** Stainless steel washer must be between thrust bearing and fiber washer on agitator drive block when installing drive shaft.

	CAUTION
<p>Use caution when installing drive shaft in agitator post to prevent cutting seal lips with the splines on lower end of drive shaft.</p>	

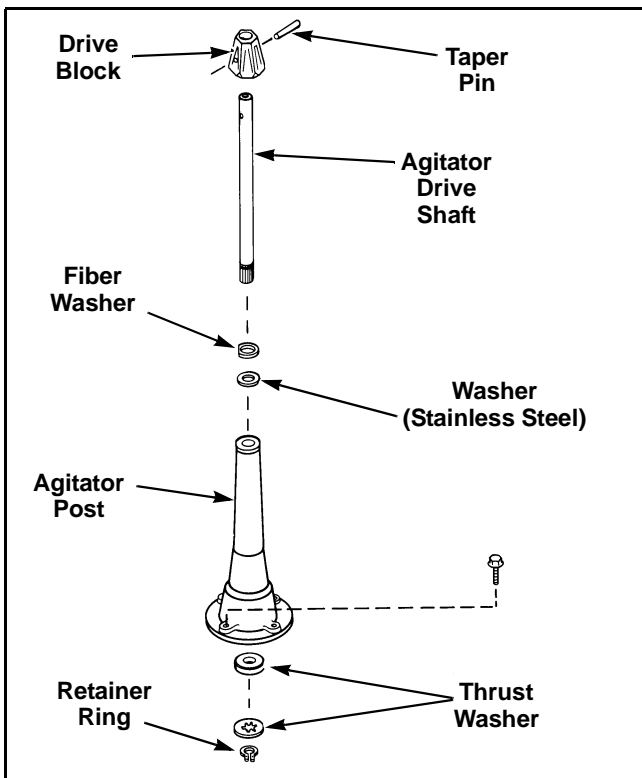


Figure 20

**32. FRONT PANEL**

Refer to *Figure 21*.

- a. Remove two screws from bottom edge of front panel.
- b. Pull bottom of panel away from washer until hold-down clips (located on top flange of panel) disengage from slots in cabinet top.

**Hold-Down Clips**

Compress hold-down clips enough to remove them from slots in top flange of panel.

**Guide Lugs**

Remove screws holding guide lugs to side flanges of front panel.

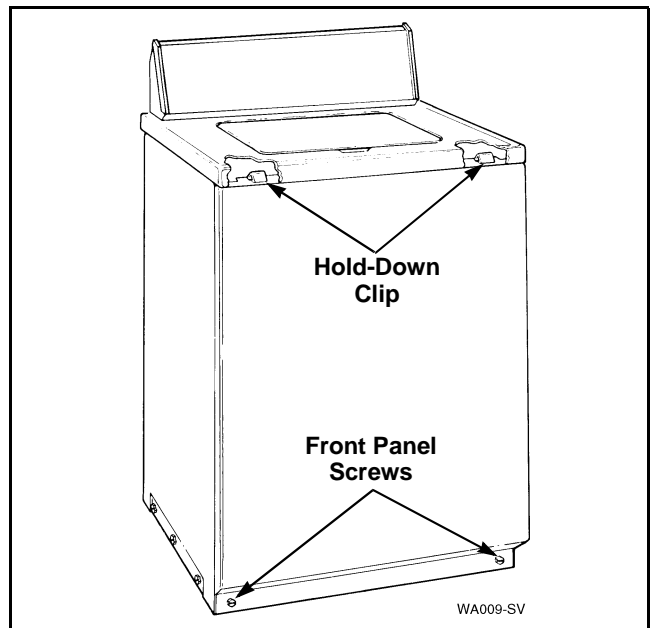


Figure 21

**33. PUMP BELT**

- a. Remove two screws from bottom edge of front panel. Refer to *Figure 21*.
- b. Pull bottom of panel away from washer until hold-down clips (located on top flange of panel) disengage from slots in cabinet top. 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.

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- c. Loosen two front mounting screws and one rear mounting screw holding pump and bracket to washer base. Refer to *Figure 22*. Pivot entire assembly toward motor to loosen belt tension.
- d. Run belt off motor pulley, then remove belt from pump pulley.

**NOTE: After installing pump belt, adjust belt. Refer to *Paragraph 58*.**

### 34. DRIVE BELT

- a. Remove two screws from bottom edge of front panel. Refer to *Figure 21*.
- b. Pull bottom of panel away from washer until hold-down clips (located on top flange of panel) disengage from slots in cabinet top. Refer to *Figure 21*.
- c. Loosen two front mounting screws and one rear mounting screw holding pump and bracket to washer base. Refer to *Figure 22*. Pivot entire assembly toward motor to loosen belt tension.

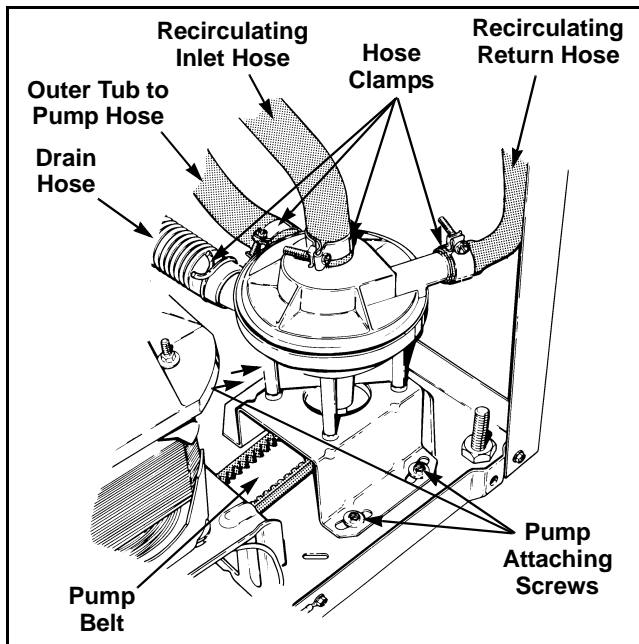


Figure 22

- d. Run belt off motor pulley, then remove belt from pump pulley.

**NOTE: After installing pump belt, adjust belt. Refer to *Paragraph 58*.**

- e. Reach in through front of motor mount and move idler lever to the left to release tension on belt.

**IMPORTANT: Use care when releasing the idler lever tension. If the idler spring or helper spring are overstretched, washer operation will be affected.**

- f. While holding idler lever, reach in and around right side of motor and run belt off right side of large drive pulley. Refer to *Figure 23*.
- g. Remove belt from motor pulley and pull belt out through front of motor mount.

**IMPORTANT: For proper washer operation, drive belt MUST be replaced with belt No. 28808 (special clutch-type belt).**

### TO INSTALL NO. 28808 DRIVE BELT

**NOTE: If the new belt is replacing a burned belt, the motor pulley "V" groove must be polished with a fine (320 grit) emery cloth to remove the rubber residue. The residue will affect the washer spin operation.**

- a. Push belt in through front of motor mount and place belt on motor pulley.
- b. Reach in and around right side of motor, starting with belt on right side of large drive pulley, run belt onto pulley.
- c. Reach in through front of motor mount and move idler lever to the left.

**IMPORTANT: Do not overstretch the idler spring, or the helper spring as it will affect the washer operation.**

- d. While holding idler lever, reach around right side of motor and place belt on idler pulley. **IDLER PULLEY MUST RIDE ON OUTSIDE OF BELT.**



## WARNING

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

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

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**NOTE:** There is no belt adjustment after installing new drive belt. Check to be sure motor and mounting bracket have been shifted toward rear of washer to its limit of travel within the mounting bracket attaching screws. If the motor and mounting bracket must be repositioned, loosen the four motor attaching screws and shift motor and mounting bracket toward rear of washer to its limit of travel. Retighten the four attaching screws. Refer to *Figure 23*.

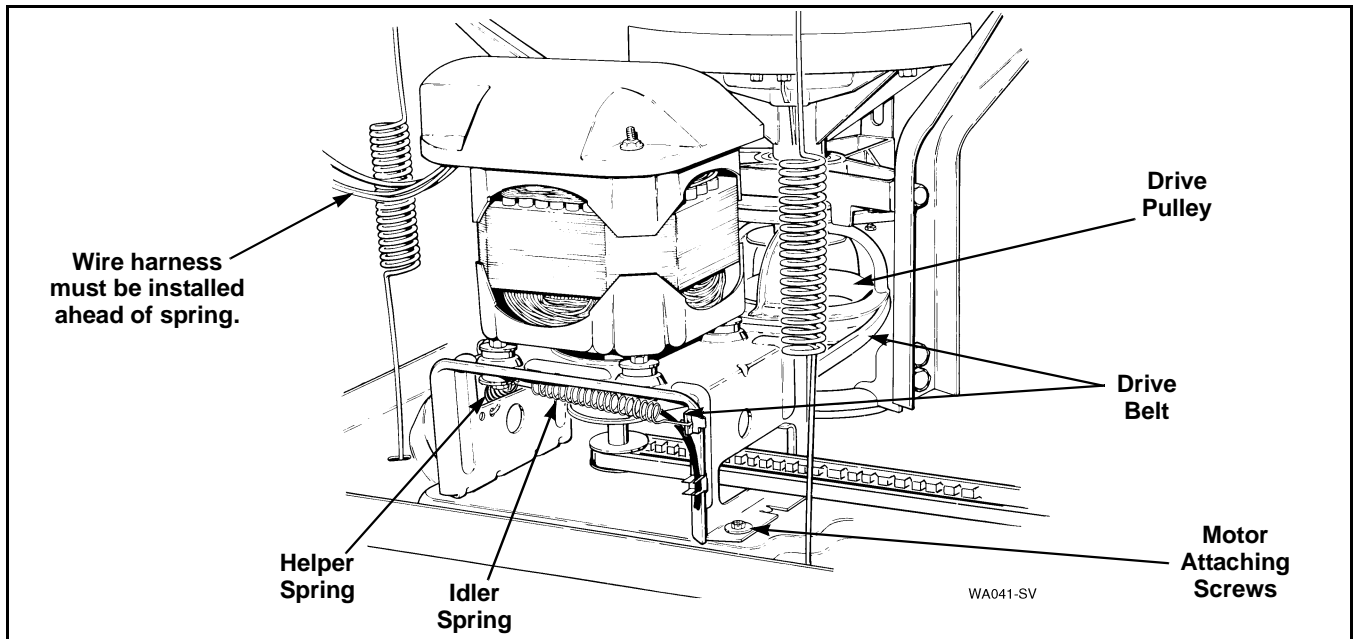


Figure 23



## 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.

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### 35. MOTOR AND MOUNTING BRACKET

- Remove front panel. Refer to *Paragraph 32*.
- Disconnect motor wire harness from base wire harness at disconnect blocks. Refer to *Figure 27*.
- Remove pump belt. Refer to *Paragraph 33*. Then remove drive belt. Refer to *Paragraph 34*.

**NOTE:** When installing belts, adjust pump belt. Refer to *Paragraph 58*. There is no drive belt adjustment.

- Remove screw holding ground wire to washer base. Refer to *Figure 24*.
- Remove four screws holding motor and mounting bracket to washer base. Refer to *Figure 24*. Then lift complete assembly out of washer.

**NOTE:** When installing motor and mounting bracket, tab on right bottom flange of mounting bracket must be placed in position hole in base. Mounting bracket must be shifted toward rear of washer to its limit of travel within the mounting bracket attaching screws.

- Remove nuts, steel washers, spacers and rubber mounts holding motor to mounting bracket. Refer to *Figure 25*. Lift motor off mounting bracket and remove balance of rubber mounts and steel washers from motor mounting studs.

**IMPORTANT:** When installing motor on mounting bracket, position motor with switch facing toward left side of mounting bracket.

**NOTE:** Refer to *Figure 25* for motor and mounting bracket assembly sequence.

### 36. IDLER LEVER AND PULLEY

- Remove motor and mounting bracket. Refer to *Paragraph 35*, steps “a” through “e”.
- Remove nut, washer and bolt holding idler lever and pulley to motor mounting bracket.

**NOTE:** Refer to *Figure 25* for idler lever and pulley assembly sequence.

- Apply No. 03637P Lubricant to the area of idler lever making contact with motor mounting bracket.

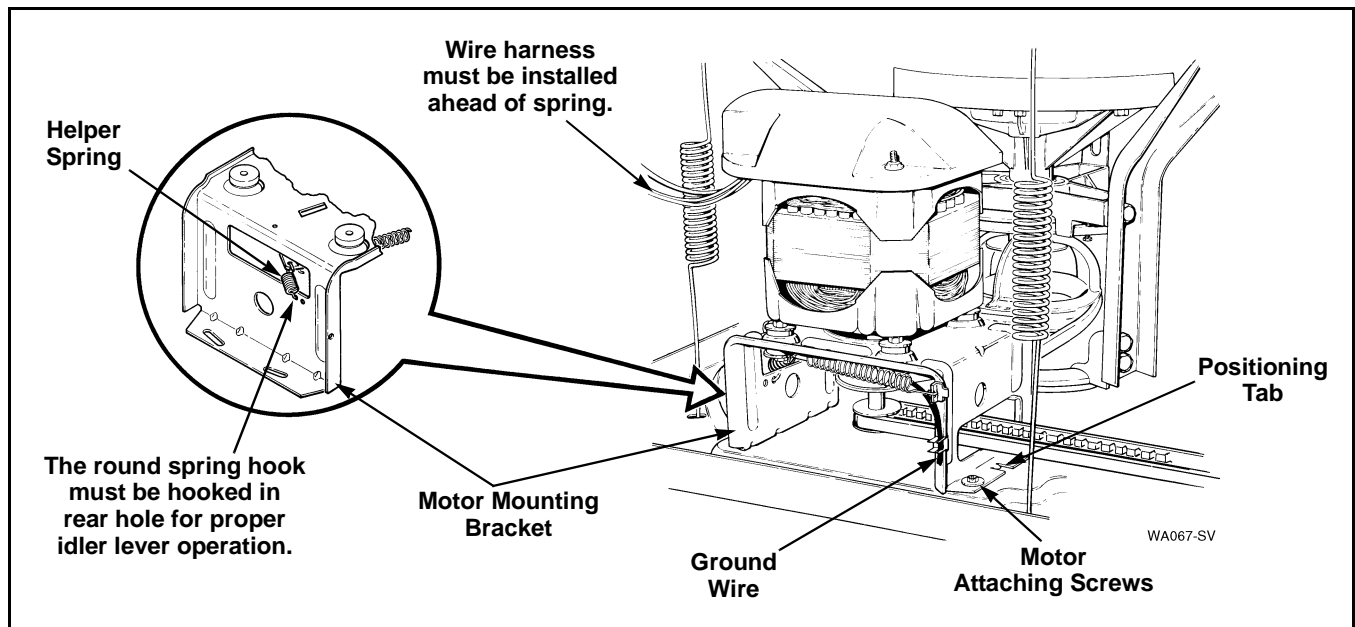


Figure 24

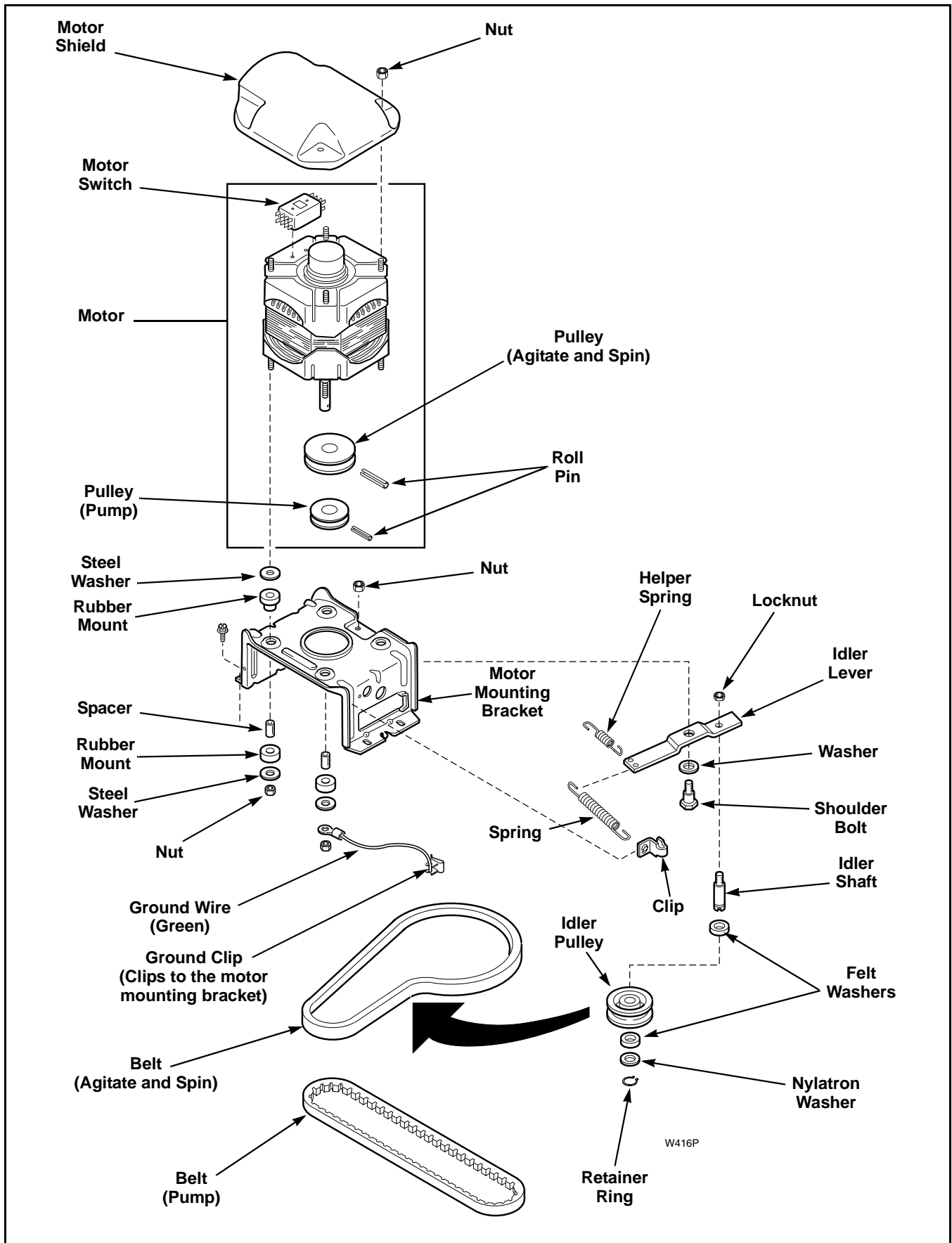


Figure 25





## WARNING

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

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

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### 37. MOTOR DRIVE PULLEY

- a. Remove motor and mounting bracket. Refer to *Paragraph 35*, steps “a” through “e”.
- b. Lay motor and mounting bracket on its side.

**NOTE:** To remove pulleys, support motor shaft (to prevent bending shaft) and drive out pulley roll pins.

### 38. MOTOR SWITCH

- a. Remove front panel. Refer to *Paragraph 32*.
- b. Remove nut holding motor shield to motor. Refer to *Figure 25*.
- c. Disconnect external wires from motor switch terminals.

**NOTE:** Refer to appropriate wiring diagram when rewiring external switch wires.

- d. Remove two screws holding switch to motor. Refer to *Figure 25*.
- e. Disconnect internal motor leads from switch terminals.

**NOTE:** Refer to *Wiring Schematics, Section 9*, for rewiring internal switch wires.

### 39. PUMP ASSEMBLY

- a. Remove front panel. Refer to *Paragraph 32*.
- b. Remove pump belt. Refer to *Paragraph 33*.

**IMPORTANT:** There will always be some water that will remain in the outer tub; therefore, before removing hoses from the pump, the hoses will have to be pinched off or drained to prevent water spillage on the floor.

- c. Remove the two front mounting screws and loosen the rear screw. Refer to *Figure 23*.

**NOTE:** Rear screw hole in pump mounting bracket is keyhole shaped; therefore, it is not necessary to remove the rear screw.

- d. Slide pump and mounting bracket toward rear of washer and lift assembly out of washer.

- e. Loosen hose clamps and remove hoses from pump assembly. Refer to *Figure 23*.

#### Pump Mounting Bracket

Remove four screws holding pump to mounting bracket.

**NOTE:** Refer to *Figure 26* for pump and mounting bracket assembly sequence.

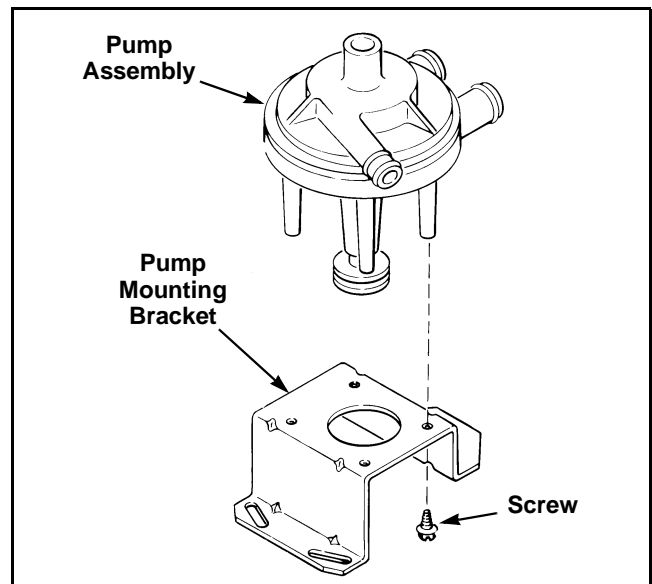


Figure 26



## 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.

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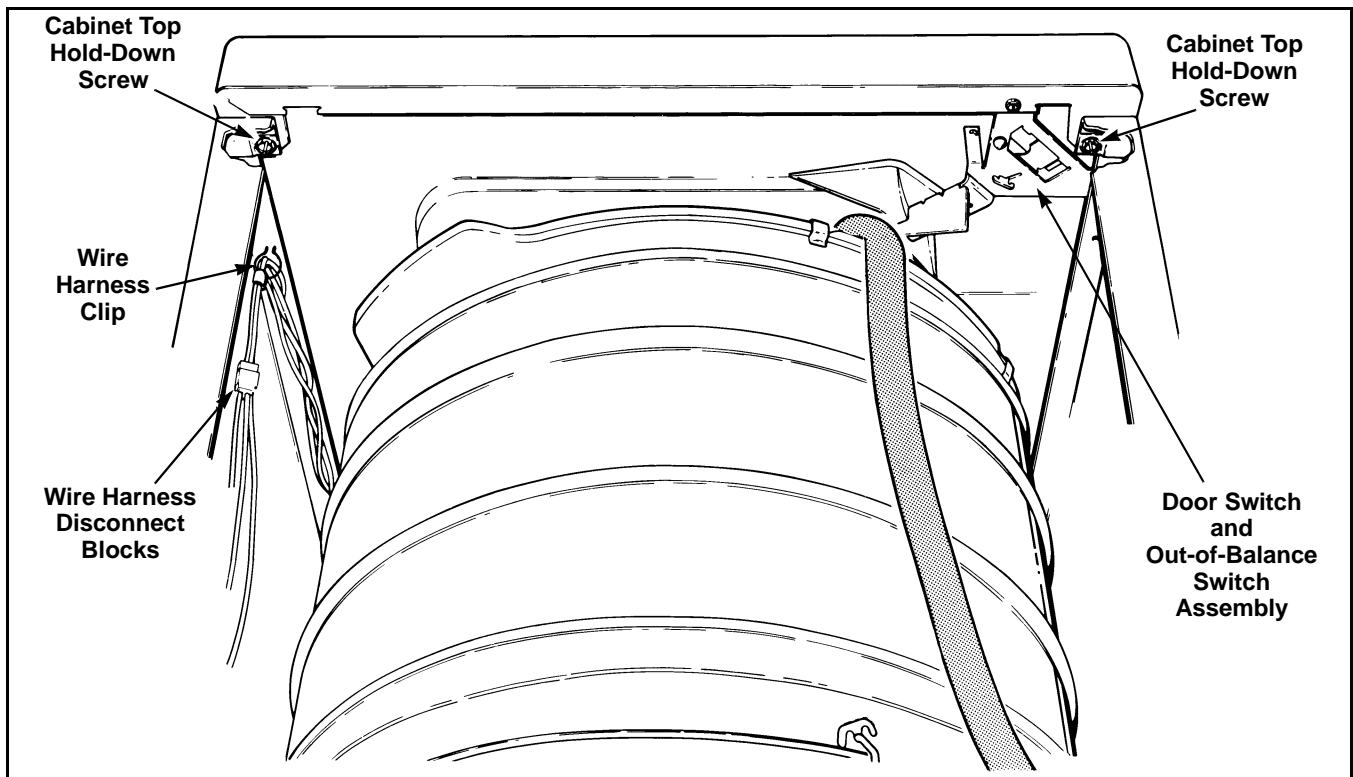


Figure 27

#### 40. CABINET TOP ASSEMBLY

- Remove two screws from bottom edge of front panel. Refer to *Figure 21*.
- Pull bottom of panel away from washer until hold-down clips (located on top flange of panel) disengage from slots in cabinet top. Refer to *Figure 21*.
- Remove two cabinet top hold-down screws. Refer to *Figure 27*.
- If area or space permits, tape loading door closed and lift cabinet top to a vertical position by hinging it on the rear hold-down bracket.

**NOTE:** Cabinet top is self-supporting, or use a small chain to support the cabinet top. Refer to *Figure 28*.

#### TO REMOVE CABINET TOP FROM WASHER

- Repeat steps “a”, “b” and “c” of *Paragraph 39*.
- Remove six screws (3 on top and 3 at lower front) holding control hood assembly to control hood rear panel and cabinet top. Disconnect hose from pressure switch and push hose down through hole in cabinet top. Reinstall control hood assembly.
- Disconnect wire harness at disconnect blocks. Refer to *Figure 27*.
- Remove wire clips holding wire harness and pressure hose to top flange of left side of washer cabinet.
- Tape loading door closed.
- Lift front of cabinet top slightly and pull forward to disengage from rear hold-down bracket.



## WARNING

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

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

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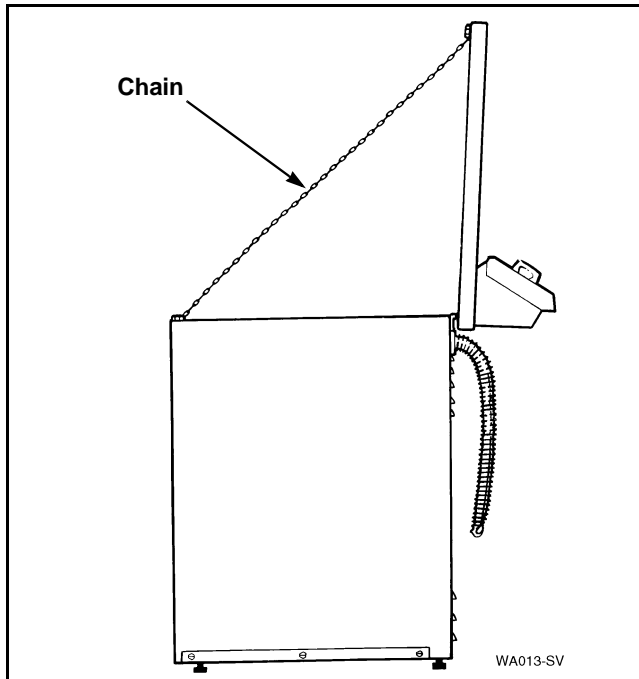


Figure 28

- g. Pull top forward far enough to permit disconnecting green ground wires from top rear corner of washer cabinet and disconnect wires from mixing valve solenoids at rear of washer.

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

- h. Carefully lift cabinet top off washer and set alongside the washer cabinet on protective padding.



## CAUTION

To reduce the risk of personal injury, be careful not to damage door switch and out-of-balance switch assembly when removing the cabinet top.

### 41. DOOR AND OUT-OF-BALANCE SWITCH AND BRACKET ASSEMBLY

Refer to *Figure 29*.

- Hinge cabinet top or remove. Refer to *Paragraph 40*.
- Remove two screws holding switch and bracket assembly to underside of the right front corner flange of the cabinet top.
- Disconnect wires from switch.

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

- Remove two screws holding switch to bracket.

**NOTE: After installing switch and bracket assembly, adjust per *Paragraph 59*.**

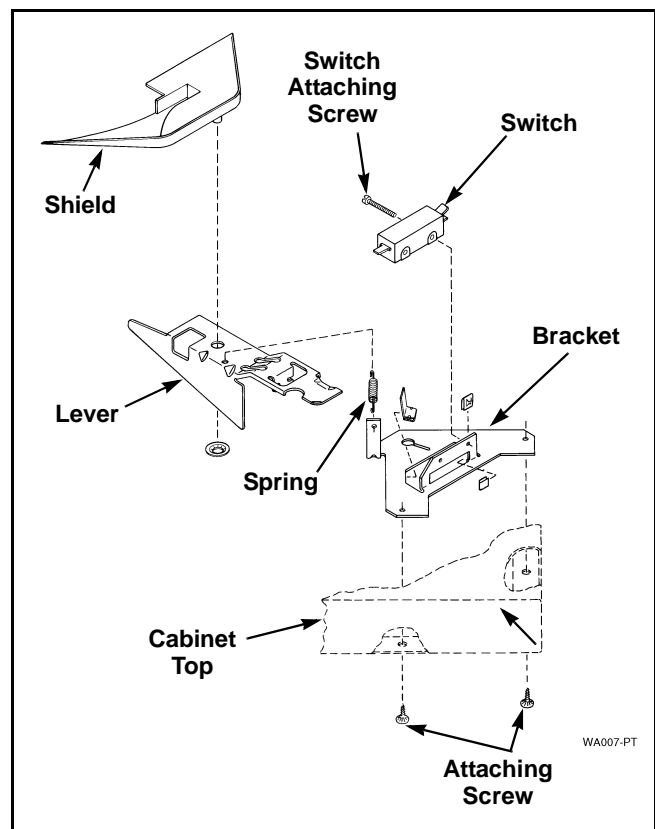


Figure 29

WA007-PT



## WARNING

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

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

W003

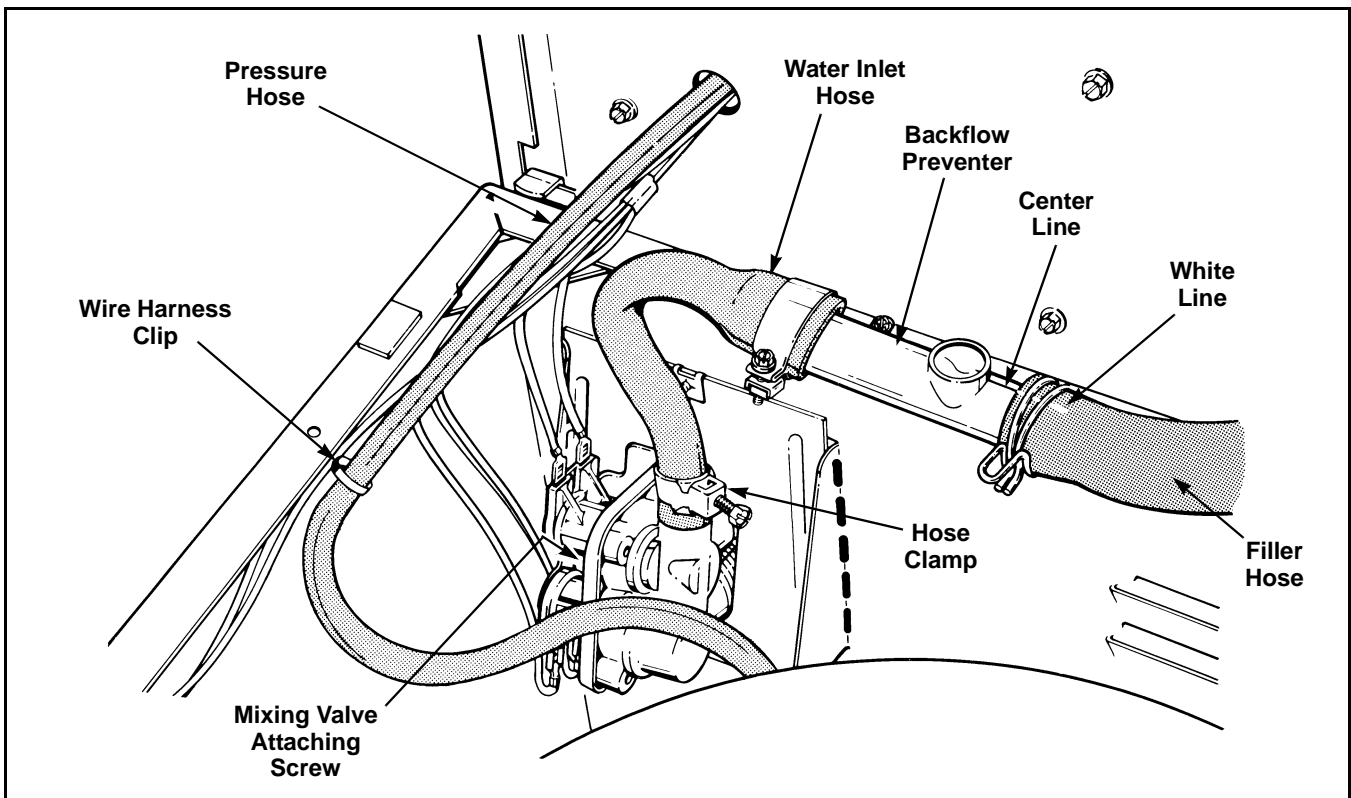


Figure 30

### 42. MIXING VALVE ASSEMBLY

- Hinge cabinet top or remove. Refer to *Paragraph 40*.
- Remove screw holding mixing valve to mounting bracket at rear of washer cabinet. Refer to *Figure 30*.

**NOTE:** When installing mixing valve, tab on bottom flange must be placed in positioning hole in mounting bracket.

- Pull mixing valve out toward front of washer far enough to permit disconnecting water inlet hoses from mixing valve. Refer to *Figure 30*.
- Disconnect wires from mixing valve solenoids.

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

### 43. WASHTUB AND LINT FILTER

#### SHORT POST MODELS

- Remove agitator. Refer to *Paragraph 28*.
- Hinge cabinet top or remove. Refer to *Paragraph 40*.
- Disconnect filler hose from backflow preventer. Refer to *Figure 30*.

**NOTE:** When installing filler hose, white line on hose must be aligned with center line of backflow preventer. Refer to *Figure 30*. A 1/8 inch clearance is necessary to prevent the hose from rubbing on the flange of the tub cover. Refer to *Figure 31*. Loosen hose clamp and move hose to obtain the proper clearance.



## WARNING

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

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

W003

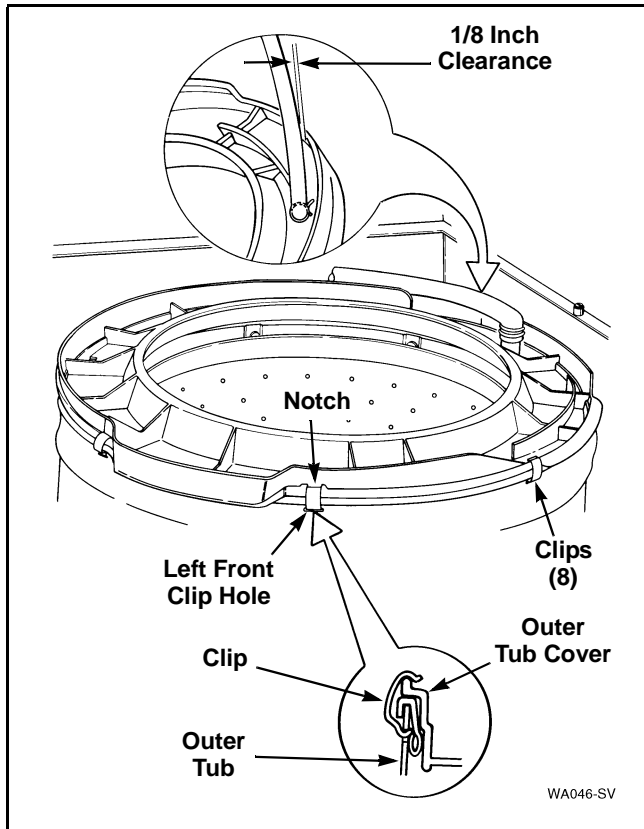


Figure 31

- d. Remove eight clips holding outer tub cover to tub, lift cover off tub and set beside washer cabinet. Refer to *Figure 31*.

**NOTE:** When installing outer tub cover, always use a new cover gasket. Lubricate the gasket with liquid soap to aid in assembly. Cover must be placed on outer tub so notch on top edge of outer tub cover is directly over left front clip hole in tub. Refer to *Figure 31*. Starting with this hole, place each spring clip in its respective hole and snap in place. Refer to *Figure 31* for proper clip installation.

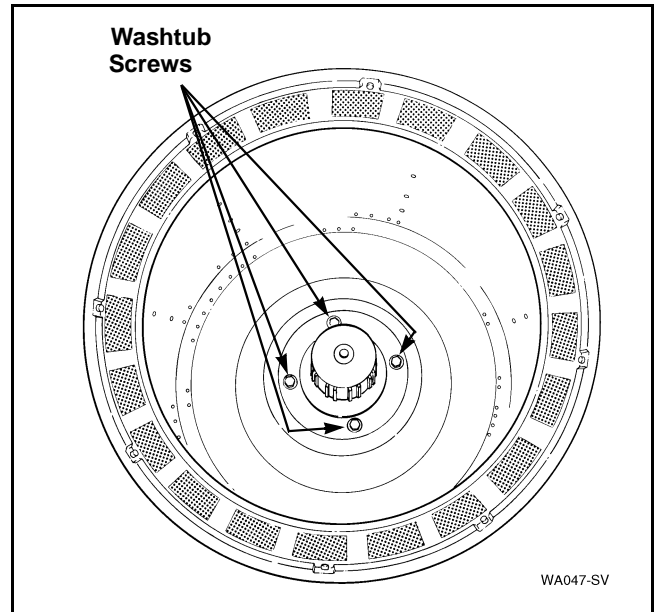


Figure 32

- e. Remove four screws and washers holding washtub to hub. Refer to *Figure 32*.

**IMPORTANT: Porcelain Washtub Models — Use caution when tightening the screws to avoid chipping porcelain on the washtub.**

- f. Lift washtub and lint filter out of outer tub.

**IMPORTANT: When removing washtub and lint filter, DO NOT lift up on lint filter as you could damage it. Grasp top flange of washtub and remove from outer tub.**

**NOTE:** When installing washtub, always use a new gasket between the tub and hub.



## WARNING

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

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

W003

### TO REMOVE LINT FILTER FROM WASHTUB

- a. Place a small screwdriver in behind the slots provided in the lint filter. Refer to *Figure 33*.
- b. Carefully pry the pins of the lint filter out of the holes in the washtub. Refer to *Figure 33*.

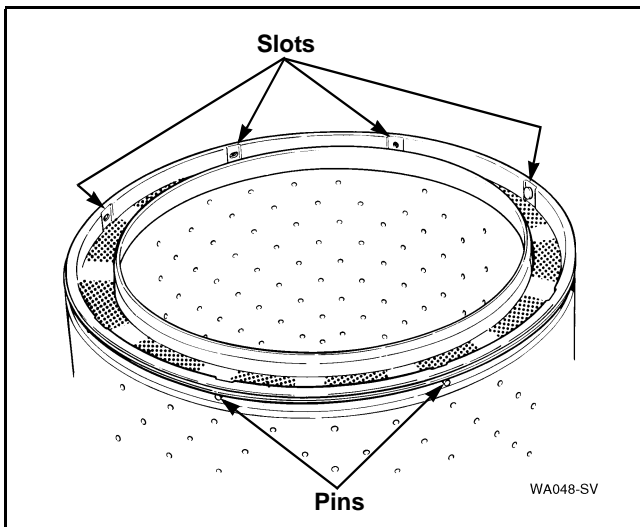


Figure 33

**NOTE:** As you are prying out the pins, lift up on the lint filter.

- c. Pry the filter pins out of the washtub holes approximately half way around the tub before the filter can be removed.

### TO INSTALL LINT FILTER IN WASHTUB

Place the lint filter on top of washtub, making sure the filter pins line up with the holes in the washtub. Then carefully push the filter down into the washtub until all the pins snap into their respective holes.

### LONG POST MODELS

- a. Remove agitator hold-down cap and lift agitator out of washtub. Refer to *Figure 17*.
- b. Hinge cabinet top or remove. Refer to *Paragraph 40*.
- c. Disconnect filler hose from backflow preventer. Refer to *Figure 30*.

**NOTE:** Starting with Serial No. N3605085, when installing filler hose, white line on hose must be aligned with center line of backflow preventer. Refer to *Figure 30*.

- d. Remove eight clips holding outer tub cover to tub. Refer to *Figure 34*. Lift cover off tub and set beside washer cabinet.

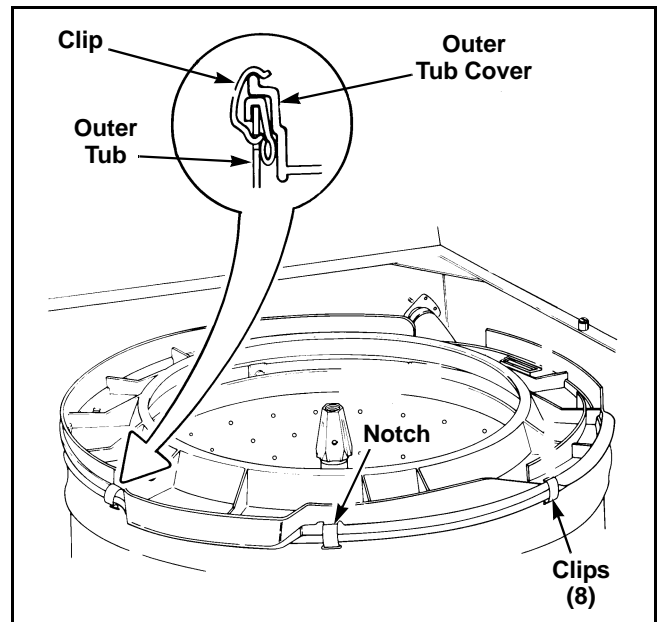


Figure 34

**NOTE:** When installing outer tub cover, always use a new cover gasket. Lubricate the gasket with a rubber lube or liquid soap to aid in assembly. Cover must be placed on outer tub so notch on top edge of outer tub cover is directly over left front clip hole in tub. Refer to *Figure 34*. Starting with this hole, place each spring clip in its respective hole and snap in place. Refer to *Figure 34* for proper clip installation.



## WARNING

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

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

W003

- e. Remove four cap screws and washers holding washtub to hub. Refer to *Figure 35*.

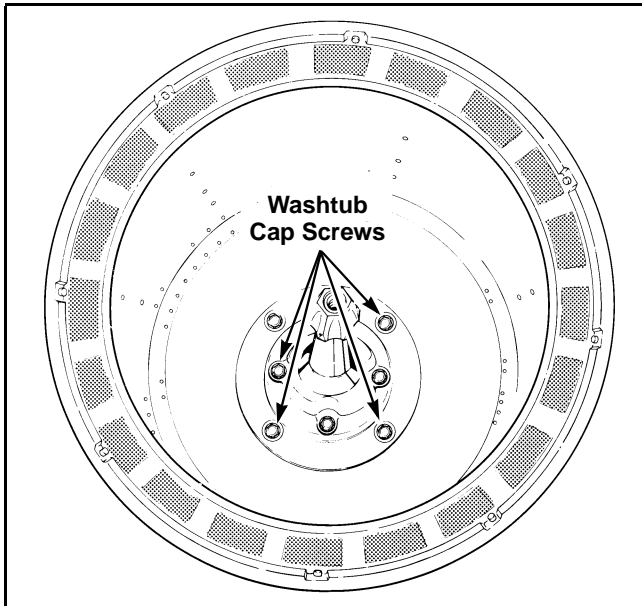


Figure 35

**IMPORTANT:** Use caution when installing the cap screws to avoid chipping porcelain on the washtub.

- f. Lift washtub and lint filter out of outer tub.

**NOTE:** When installing washtub, use a new gasket between tub and hub.

- g. Remove the eight fasteners holding lint filter to washtub. Refer to *Figure 36*.

#### 44. WATER SEAL AND HUB ASSEMBLY

##### SHORT POST MODELS

**IMPORTANT:** If water is present in washtub, spin and pump out before removing drive bell.

- Remove two screws from bottom edge of front panel. Refer to *Figure 21*.
- Pull bottom of panel away from washer until hold-down clips (located on top flange of panel) disengage from slots in cabinet top. Refer to *Figure 21*.

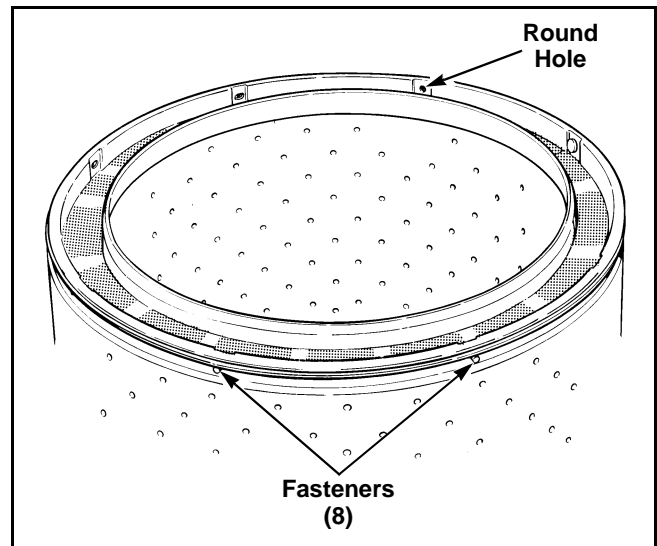


Figure 36

- Remove two cabinet top hold-down screws. Refer to *Figure 27*.
- Remove agitator. Refer to *Paragraph 28*.
- Disconnect filler hose from backflow preventer, then remove the eight clips holding cover to outer tub. Refer to *Figure 31*.

**NOTE:** When reinstalling filler hose, white line on hose must be aligned with center line of backflow preventer. Refer to *Figure 30*.

- Lift cover off outer tub and set beside washer cabinet and remove old cover gasket.
- Remove the four screws holding washtub to hub, then lift washtub out of outer tub. Refer to *Figure 32*.

**IMPORTANT:** When removing washtub, DO NOT lift up on the lint filter as you could damage the filter. Grasp the top flange of the washtub and remove from outer tub.

**NOTE:** Be sure all traces of old gasket are removed from bottom of washtub.

- Remove agitator drive bell. Refer to *Paragraph 29*.
- Remove the seal head from the hub.



## WARNING

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

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

W003

**IMPORTANT:** We recommend that both the seal seat and the seal head be replaced together in pairs. **DO NOT** replace only one of the two seals.

- j. Remove the large hex nut using No. 306P4 Hex Wrench. Refer to *Figure 37*.

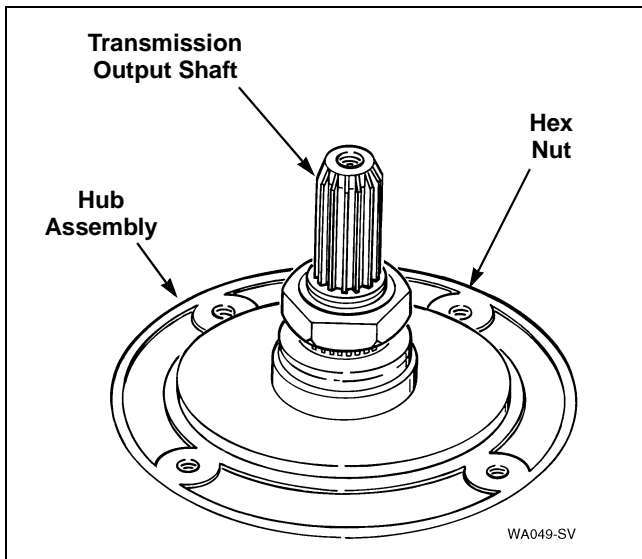


Figure 37

- k. Remove the spline insert from the transmission tube.



## WARNING

Use a new spline insert each time the hex nut is removed. **DO NOT** reuse the old insert as the hex nut may loosen during operation.

- l. Remove hub from splines on transmission tube.

**NOTE:** It may be necessary to use a gear puller to remove the hub.

- m. Remove the old water seal from the outer tub.

**IMPORTANT:** Use caution when removing the old seal so as not to damage the tub flange or porcelain.

### TO INSTALL NO. 495P3 HUB AND SEAL KIT

**IMPORTANT:** Be sure the inner surface of the tub flange is clean of all foreign material before installing the new seal.

- a. Apply a small amount of No. 27615P Sealant, (supplied in kit) around the outer surface of the tub flange. Refer to *Figure 38*.

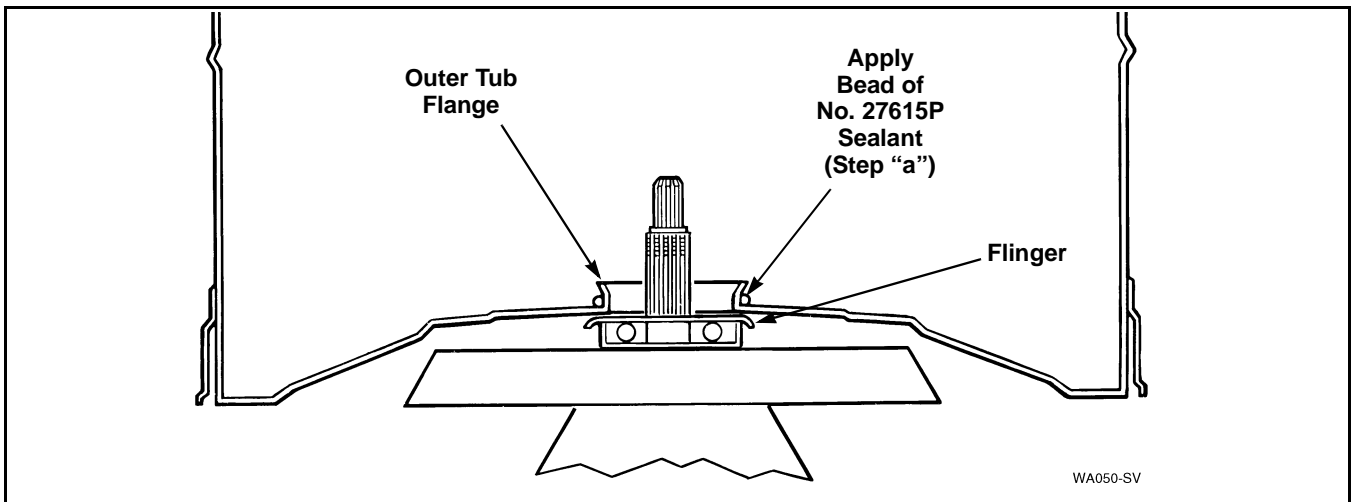


Figure 38





## WARNING

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

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

W003

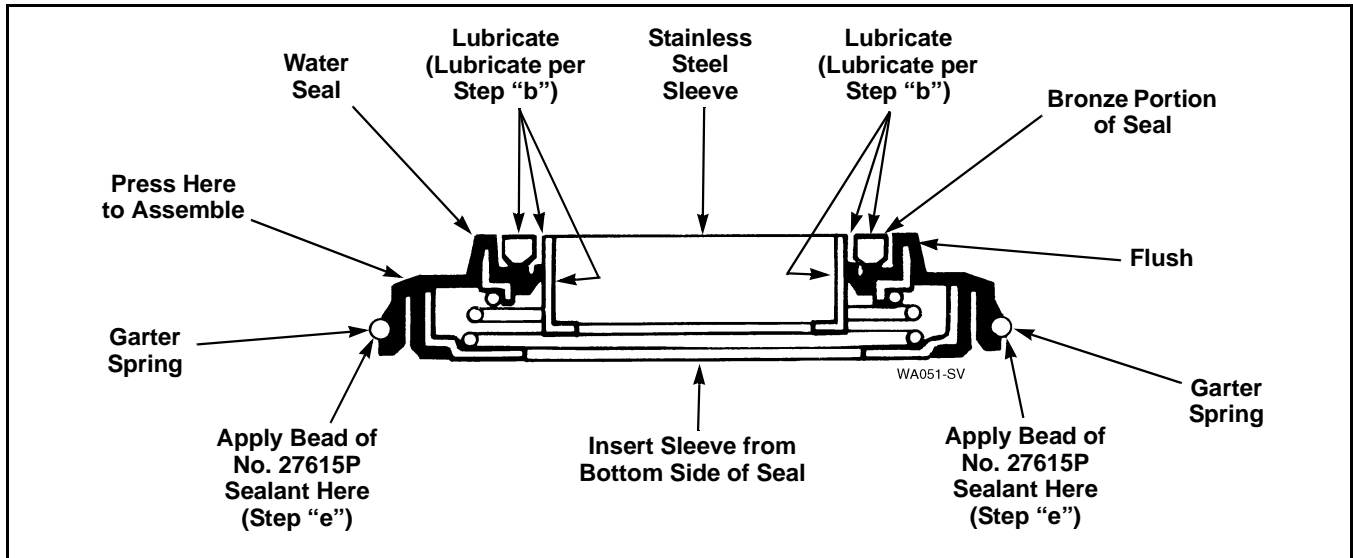


Figure 39

**IMPORTANT: DO NOT allow sealant to get in contact with the flinger as this could prevent the flinger from keeping moisture out of the upper bearing. Refer to Figure 38.**

- Apply a light film of nonstaining petroleum jelly (such as Vaseline<sup>®</sup>) to bronze portion of water seal and to outer surface of stainless steel sleeve. Refer to Figure 39.

**IMPORTANT: DO NOT over lubricate!**

- Insert stainless steel sleeve into water seal from bottom side of the seal until the sleeve is flush with bronze portion of the seal. Refer to Figure 39.
- Leave the garter spring on seal. Place new seal over outer tub flange (with seal lip on outside of tub flange). Then press seal into tub flange opening using moderate finger pressure.
- Carefully apply a small amount of No. 27615P Sealant (supplied with kit) around outer edge of seal and tub. (The area located just below the garter spring). Refer to Figure 39.

**IMPORTANT: DO NOT allow sealant to get in contact with the sealing surface of water seal as it will cause a water leak.**

- Lubricate inner splines of new hub assembly (supplied in kit) with No. 27604P Anti-Seize Compound.
- Carefully place new hub assembly on splined transmission tube.

**IMPORTANT: Firmly push hub down against the outer tub seal and hold in this position.**

- While holding hub down, place spline insert onto the transmission tube until it bottoms against the hub. Then place the hex nut on the transmission tube (with the larger inside bevel on the nut toward the spline insert), then tighten the nut.

**IMPORTANT: Torque hex nut down between 40 and 70 foot pounds (54.23 to 94.91 Nm). If torque wrench is not available, tap hex wrench with a hammer until hub turns or until nut will no longer tighten.**

- Apply a small amount of non-staining petroleum jelly (such as Vaseline<sup>®</sup>) to each of the sealing surfaces where washtub gasket will contact hub and the bottom of washtub.
- Carefully place the new washtub gasket (supplied in kit) on hub.



## WARNING

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

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

W003

**NOTE: Be sure holes in gasket are aligned with bolt holes in hub and that all traces of the old gasket are removed from the bottom of the washtub.**

- k. Install washtub by grasping the top flange of the washtub and carefully lower washtub down onto the gasket and hub.

**IMPORTANT: Before setting tub into place, be sure bolt holes in washtub line up with holes in gasket and hub.**

- l. Secure washtub to hub using four screws previously removed.

**IMPORTANT: Porcelain Washtub Models — Use caution when tightening cap screws to avoid chipping porcelain on the washtub.**

- m. Carefully place the new outer tub cover gasket (supplied in kit) around top rim of outer tub.

**NOTE: When installing outer tub cover, lubricate the cover gasket with liquid soap to aid assembly. Cover must be placed on outer tub so notch on top edge of outer tub cover is directly over left front clip hole in tub. Refer to Figure 31. Starting with this hole, place each spring clip in its respective hole and snap into place. Refer to Figure 31 for proper clip installation.**

- n. Reinstall filler hose on backflow preventer.

**NOTE: When reinstalling the filler hose, white line on hose must be aligned with the center line of the backflow preventer. Refer to Figure 30.**

### TO INSTALL DRIVE BELL AND NO. 39508P SEAL KIT

- a. Place the new seal head (supplied in kit) onto hub. Then carefully push seal head into position. Make sure the seal is pressed down against the shoulder on the hub.

**NOTE: Soapy water will aid in the assembly of the seal onto the hub.**

- b. Install the new seal seat (supplied in kit) into the drive bell.

- c. Position drive bell over transmission shaft. Rotate drive bell until splines in drive bell line up with splines on transmission shaft.
- d. Place the No. 294P4 Bell Tool over top of bell. Screw bolt into transmission shaft until it bottoms out.

**NOTE: It is not necessary to clamp the tool jaws on the drive bell during this operation.**

- e. Use an adjustable wrench and turn large nut on tool **CLOCKWISE** to force drive bell down onto transmission shaft until the bell bottoms out on the shaft.
- f. Turn the bolt out of the transmission shaft and remove the tool.
- g. Install the new screw and o-ring washer (supplied in kit) in top of drive bell.

**NOTE: Torque the new screw down between 45 and 55 inch pounds (52 to 63 cm-kg). Over torque will mushroom the plastic bell.**

- h. Place the agitator on top of the drive bell. Slowly rotate the agitator until the fingers on the underside of agitator line up with the large slots on drive bell.
- i. A sharp blow on top of the agitator with the palm of your hand will force the agitator down onto the drive bell, allowing the fingers on the underside of the agitator to lock under the bottom edge of the drive bell.

**NOTE: Do not push the agitator onto the drive bell any further than necessary.**

- j. Reinstall cabinet top and secure to washer cabinet using screws previously removed.
- k. Reinstall front panel.
  1. Place washer into the final spin, close loading door, start washer and let washtub spin for approximately 30 seconds to one minute.

**IMPORTANT: Step “I” is necessary to allow the petroleum jelly, applied to the water seal, a chance to run in on the seal surfaces before water is added to the washer.**



## WARNING

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

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

W003

### 45. WATER SEAL ASSEMBLY

#### LONG POST MODELS

**IMPORTANT:** If water is present in washtub, spin and pump out before removing agitator post.

- a. Remove front panel. Refer to *Paragraph 32*.
- b. Remove two cabinet top hold-down screws and hinge cabinet top or remove from washer. Refer to *Paragraph 40*.
- c. Remove agitator hold-down cap and lift agitator out of washtub.
- d. Disconnect filler hose from backflow preventer, then remove the eight clips holding cover to outer tub. Refer to *Figure 30*.

**NOTE:** When reinstalling filler hose, white line on hose must be aligned with center line of backflow preventer. Refer to *Figure 30*.

- e. Lift cover off outer tub and set beside washer cabinet and remove old cover gasket.
- f. Remove the four cap screws holding washtub to hub, then lift washtub out of outer tub. Refer to *Figure 35*.

**NOTE:** Be sure all traces of old gasket are removed from bottom of washtub.

- g. Remove four cap screws holding agitator post assembly to hub, then lift assembly from hub.
- h. Straighten bent tab(s) on lockwasher, then remove hex nut using No. 306P4 Hex Wrench. Refer to *Figure 40*.
- i. Remove hub from splines on transmission tube.

**NOTE:** It may be necessary to use a gear puller with No. 230P4 Guide Tool to remove hub.

- j. Remove old seal from outer tub.

**IMPORTANT:** Use caution when removing the old seal so as not to damage the tub flange or porcelain.

### TO INSTALL NO. 356P3 WASHER SEAL KIT

**IMPORTANT:** Be sure the inner surface of the tub flange is clean of all foreign material before installing the new seal.

- a. Apply a small amount of No. 27615P Sealant, (supplied in kit) around the outer surface of the tub flange. Refer to *Figure 41*.

**IMPORTANT:** DO NOT allow sealant to get in contact with the flinger located below the flanged area.

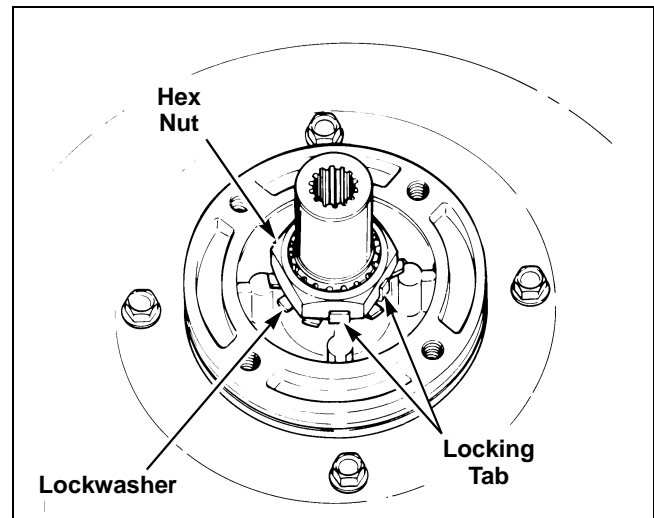


Figure 40

- b. Apply a small amount of nonstaining petroleum jelly (such as Vaseline®) to bronze portion of water seal and to the outer surface of stainless steel sleeve.

**IMPORTANT:** DO NOT over lubricate!

- c. Insert stainless steel sleeve into water seal from bottom side of the seal until the sleeve is flush with bronze portion of the seal. Refer to *Figure 42*.
- d. Leave the garter spring on seal. Place new seal over outer tub flange (with seal lip on outside of tub flange). Then press seal into tub flange opening using moderate finger pressure.



## WARNING

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

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

W003

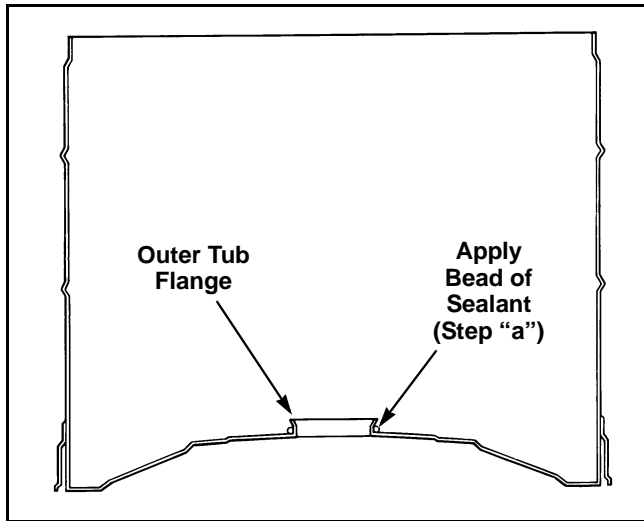


Figure 41

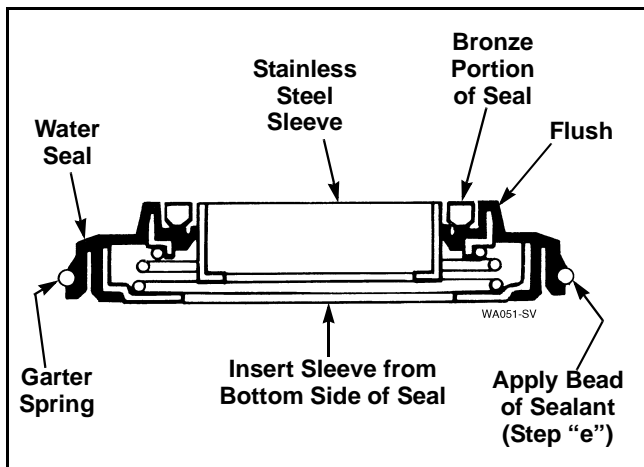


Figure 42

- e. Carefully apply a small amount of No. 27615P Sealant (supplied in kit) around the outer edge of seal and tub (the area located just below the garter spring). Refer to *Figure 42*.

**IMPORTANT: DO NOT allow sealant to get in contact with the sealing surface of water seal!**

- f. Lubricate inner splines of new hub assembly (supplied in kit) with No. 27604P Anti-Seize Compound.

- g. Carefully place new hub assembly on splined transmission tube and install lockwasher and hex nut. Refer to *Figure 40*.

**NOTE: Lock nut must be installed with beveled side down.**

**IMPORTANT: Torque hex nut down between 40 to 70 foot pounds (54.23 to 94.91 Nm). If torque wrench is not available, tap hex wrench with a hammer until hub turns or until nut will no longer tighten. After nut has been tightened, bend at least two locking tabs on lockwasher into place on hex nut. Refer to *Figure 40*.**

- h. Apply a small amount of non-staining petroleum jelly (such as Vaseline) to each of the sealing surfaces where washtub gasket will contact hub.
- i. Carefully place the new washtub gasket (supplied in kit) on hub.

**NOTE: Be sure holes in gasket are aligned with bolt holes in hub.**

- j. Apply a small amount of non-staining petroleum jelly (such as Vaseline®) to top surface of gasket where bottom of washtub will contact gasket.

**NOTE: Be sure all traces of old gasket are removed from bottom of washtub.**

- k. Install washtub by grasping underside of lint filter and carefully lower washtub down onto gasket and hub.

**IMPORTANT: Before setting tub into place, be sure bolt holes in washtub line up with holes in gasket and hub.**

- l. Secure washtub to hub using four cap screws previously removed.

**IMPORTANT: Use caution when tightening cap screws to avoid chipping porcelain on the washtub.**



## WARNING

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

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

W003

**NOTE:** If Loctite was originally used between the agitator post and hub, the Loctite must be used again when replacing the agitator post. Be sure all traces of the Loctite have been removed from the underside of the agitator post. Apply approximately a 1/16 inch diameter continuous bead of No. 37577P Loctite to the embossed surfaces of either the agitator post or hub. Then continue on with step “m”.

If gasket was originally used between agitator post and hub, then use the new gasket (supplied in kit) and install gasket and agitator post as follows:

- (1) Apply a small bead of Sealant No. 27615P to each of the sealing surfaces where the agitator post gasket will contact the hub.
- (2) Carefully place the new agitator post gasket, No. 27020 (supplied in kit) on hub.

**NOTE:** Be sure holes in gasket are aligned with bolt holes in hub.

- (3) Apply two small beads of Sealant No. 27615P to the top surface of gasket where bottom of agitator post casting will contact gasket.

**NOTE:** Be sure all traces of the old gasket are removed from the bottom of agitator post.

- m. Carefully lower agitator post assembly down onto hub.

**IMPORTANT:** Before setting post in place, make sure splines on bottom end of agitator drive shaft line up with splines into coupling on transmission, and holes in agitator post line up with the bolt holes in hub.

**NOTE:** It may require tapping lightly on drive block to force splines on drive shaft into the coupling on transmission assembly.

- n. Secure agitator post to hub using cap screws previously removed.
- o. Carefully place new outer tub cover gasket (supplied in kit) around top rim of outer tub.

**NOTE:** When installing outer tub cover, lubricate the cover gasket with liquid soap to aid assembly. Cover must be placed on outer tub so notch on top edge of outer tub cover is directly over left front clip hole in tub. Refer to *Figure 34*. Starting with this hole, place each spring clip in its respective hole and snap into place. Refer to *Figure 34* for proper clip installation.

- p. Reinstall filler hose on backflow preventer.

**NOTE:** When reinstalling the filler hose, white line on hose must be aligned with center line of the backflow preventer. Refer to *Figure 30*.

- q. Reinstall cabinet top and secure to washer cabinet using screws previously removed.
- r. Reinstall front panel.
- s. Replace agitator and tighten agitator hold-down cap.
- t. Turn washer timer to the final spin, close loading door, start washer and let washtub spin for approximately 30 seconds to 1 minute.

**IMPORTANT:** Step “t” is necessary to allow the petroleum jelly, applied in step “b,” a chance to run in on the seal surfaces before water is added to the washer.

## 46. OUTER TUB

### SHORT POST MODELS

**IMPORTANT:** If water is present in washtub, spin and pump out before removing agitator post.

- a. Remove agitator. Refer to *Paragraph 28*.
- b. Remove front panel. Refer to *Paragraph 32*.
- c. Remove two cabinet top hold-down screws and hinge cabinet top or remove. Refer to *Paragraph 40*.
- d. Loosen hose clamp and disconnect filler hose from backflow preventer, then remove the eight clips holding cover to the outer tub. Refer to *Figure 31*.



## WARNING

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

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

W003

**NOTE:** When reinstalling filler hose, white line on hose must be aligned with center line of backflow preventer. Refer to *Figure 30*.

- e. Remove cover from outer tub and set off to the side to avoid damage, then remove old cover gasket.

**NOTE:** When installing outer tub cover, always use a new cover gasket. Lubricate the gasket with liquid soap to aid in assembly. Cover must be placed on outer tub so notch on top edge of outer tub cover is directly over left front clip hole in tub. Refer to *Figure 31*. Starting with this hole, place each spring clip in its respective hole and snap into place. Refer to *Figure 31* for proper clip installation.

- f. Remove four screws and washers holding washtub to hub. Refer to *Figure 32*.

**IMPORTANT:** Porcelain Washtub Models — Use caution when tightening cap screws to avoid chipping porcelain on washtub.

- g. Lift washtub (with lint filter attached) out of outer tub.

**IMPORTANT:** When removing washtub and lint filter, DO NOT lift up on lint filter as you could damage the filter. Grasp top flange of washtub and remove from outer tub.

- h. Remove agitator drive bell. Refer to *Paragraph 29*.
- i. Remove large hex nut using a No. 306P4 Hex Wrench. Then remove spline insert from transmission tube.

**IMPORTANT:** Use a new spline insert each time hex nut is removed. DO NOT reuse old insert because hex nut may loosen during washer operation.

- j. Remove hub from splines on transmission tube.

**NOTE:** It may be necessary to use a gear puller to remove hub.

- k. Remove old water seal from outer tub.

**IMPORTANT:** Use caution when removing old seal so as not to damage tub flange or porcelain.

**NOTE:** When reinstalling or replacing outer tub, always install a new No. 495P3 Water Seal and Hub Kit. Refer to *Paragraph 44*.

- l. Reach in through front of motor mounting bracket and move idler lever to the left to release tension on belt.

**IMPORTANT:** Use caution when releasing the idler lever tension. If the idler lever spring or helper spring are overstretched, it will affect the washer operation.

- m. While holding idler lever, reach in and around right side of motor and run belt off right side of pulley.

**IMPORTANT:** When removing or reinstalling complete outer tub into washer (with transmission, balance ring and pivot dome attached), damage could occur to idler lever if idler spring and helper spring are left hooked to motor mounting bracket.

With idler spring and helper spring hooked to motor mounting bracket, idler lever extends out through rear of bracket. When removing or reinstalling complete tub assembly, idler lever is in the way and can be damaged (bent), or idler pulley could be chipped. A bent idler lever will cause misalignment of idler pulley with the drive belt, and a chipped idler pulley will damage belt.

We recommend that before removing or reinstalling the complete assembly, you unhook idler spring and helper spring and move idler lever out of the way. This will prevent the possibility of idler lever or pulley damage.

- n. Using No. 321P4 Spring Hook Tool, unhook five centering springs from lower edge of outer tub. 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.

W003

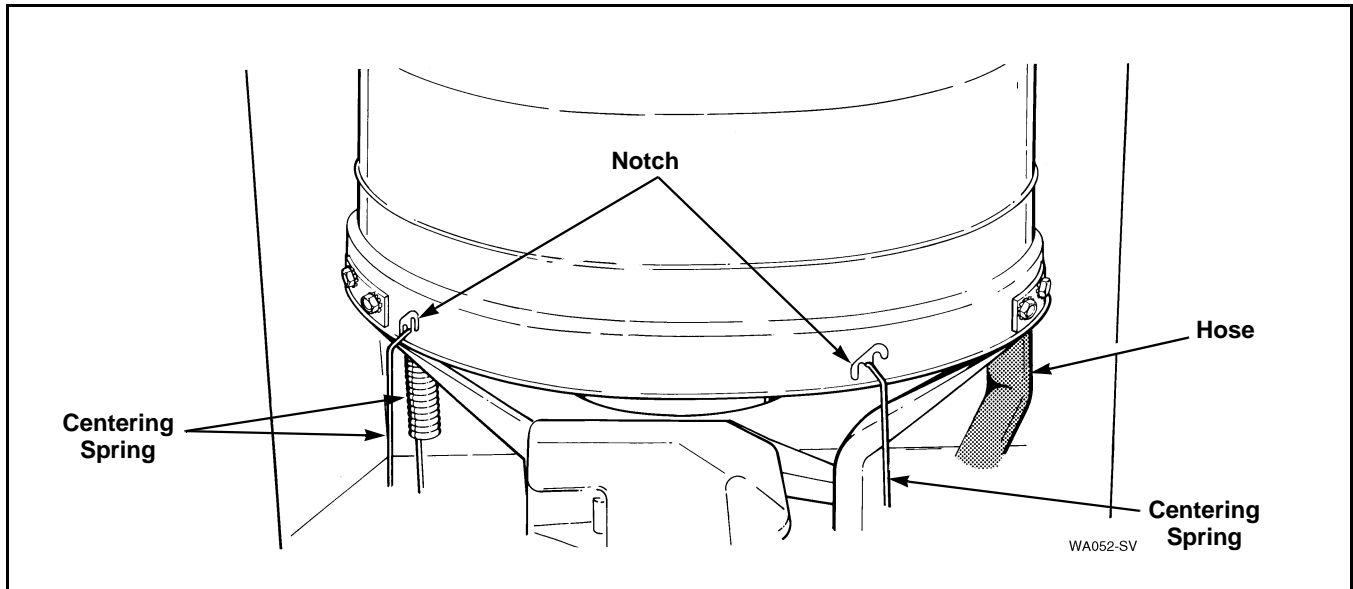


Figure 43

**IMPORTANT:** When removing the centering springs, mark on the side of the outer tub what notch the spring was hooked into. Springs must be placed in the same notch when reinstalling. Do not overstretch the springs.

- o. Disconnect hose between outer tub and pump assembly.
- p. Remove hose clamp holding pressure hose to pressure switch accumulator. Then remove tape holding pressure hose to outer tub.
- q. Grasp outer tub and lift complete tub assembly (with transmission, balance ring and pivot dome attached) straight up and out of washer cabinet.
- r. Turn outer tub upside-down and set on protective padding.
- s. Remove screws and lockwashers holding each support leg to outer tub. Refer to *Figure 44*. Then lift transmission, balance ring and pivot dome off tub.

**NOTE:** To prevent porcelain damage, leg plates must be installed on both sides of outer tub flange when reinstalling support legs. (The thinner plate must be installed between leg and tub flange and the thicker plate must be installed on outside of tub flange.) Do not overtighten the screws as this could cause stripping or porcelain damage.

- t. Turn outer tub upright and remove pressure accumulator and grommet.

**NOTE:** When installing grommet into outer tub, the thicker lip of grommet must be installed to outside of tub. Lubricate outer surface of large opening of accumulator with liquid soap to aid when assembling the accumulator into the grommet.

### LONG POST MODELS

- a. Remove front panel. Refer to *Paragraph 32*.
- b. Remove two cabinet top hold-down screws and hinge cabinet top or remove from washer. Refer to *Paragraph 40*.
- c. Remove agitator hold-down cap and lift agitator out of washtub.



## WARNING

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

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

W003

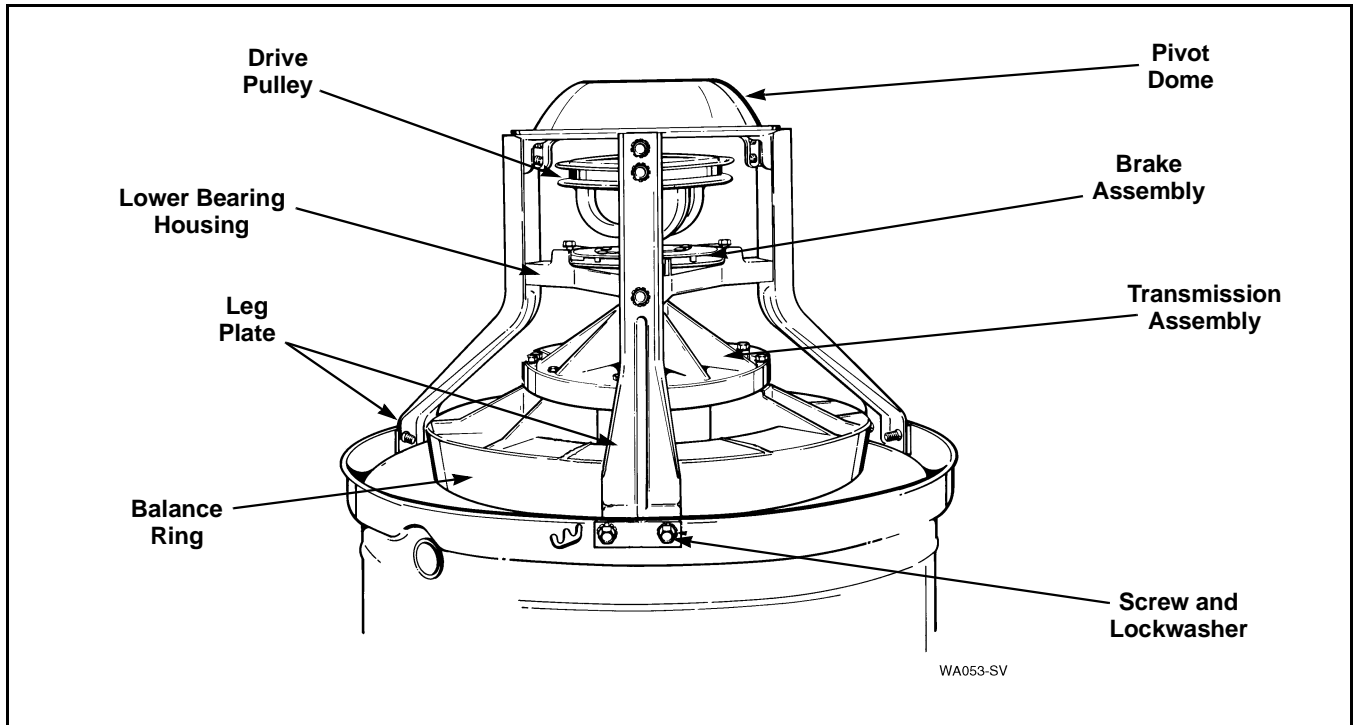


Figure 44

- d. Loosen hose clamp and disconnect filler hose from backflow preventer, then remove the eight clips holding cover to outer tub. Refer to *Figure 31*.

**NOTE:** Starting with Serial No. N3605085, when reinstalling filler hose, white line on hose must be aligned with center line of backflow preventer. Refer to *Figure 30*.

- e. Remove cover off outer tub and set off to the side to avoid damage, then remove old gasket.

**NOTE:** When installing outer tub cover, always use a new cover gasket. Lubricate the gasket with liquid soap to aid in assembly. Cover must be placed on outer tub so notch on top edge of outer tub cover is directly over left front clip hole in tub. Refer to *Figure 31*. Starting with this hole, place each spring clip in its respective hole and snap in place. Refer to *Figure 31* for proper clip installation.

- f. Remove four cap screws and washers holding washtub to hub. Refer to *Figure 35*.

**IMPORTANT:** Use caution when installing cap screws to avoid chipping porcelain on the washtub.

- g. Lift washtub (with lint filter attached) out of outer tub.

**NOTE:** Be sure all traces of old gasket are removed from bottom of washtub.

- h. Remove four cap screws holding agitator post to hub, then remove assembly from hub. Refer to *Figure 18*.
- i. Straighten bent tab(s) on lockwasher, then remove hex nut using No. 306P4 Hex Wrench. Refer to *Figure 40*.
- j. Remove hub from splines on transmission tube.

**NOTE:** It may be necessary to use a gear puller with No. 230P4 Guide Tool to remove hub.





## WARNING

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

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

W003

k. Remove old seal from outer tub.

**IMPORTANT:** Use caution when removing the old seal so as not to damage the tub flange or porcelain.

**NOTE:** When reinstalling or replacing outer tub, always install a new No. 356P3 Washer Seal Kit. Refer to *Paragraph 44*.

l. Reach in through front of motor mounting bracket and move idler lever to the left to release tension on belt.

**IMPORTANT:** Use caution when releasing the idler lever tension (and helper spring if present). If the springs are overstretched, it will affect the washer operation.

m. While holding idler lever, reach in and around right side of motor and run belt off right side of pulley.

**IMPORTANT:** When removing or reinstalling complete outer tub into washer (with transmission, balance ring and pivot dome attached), damage could occur to idler lever if idler spring is left hooked to motor mounting bracket.

We recommend that before removing or reinstalling the complete assembly, you unhook idler spring (and helper spring, if present) and move idler lever out of the way. This will prevent the possibility of idler lever or pulley damage.

With idler spring hooked to motor mounting bracket, idler lever extends out through rear of bracket. When removing or reinstalling complete tub assembly, idler lever is in the way and can be damaged (bent), or idler pulley could be chipped. A bent idler lever will cause misalignment of idler pulley with the drive belt, and a chipped idler pulley will damage belt.

n. Using No. 321P4 Spring Hook Tool, unhook five centering springs from lower edge of outer tub. Refer to *Figure 43*.

**IMPORTANT:** When removing the centering springs, mark on side of outer tub what notch the spring was hooked into. Springs must be placed in the same notch when reinstalling. Do not overstretch springs.

- o. Disconnect hose between outer tub and pump assembly.
- p. Remove hose clamp holding pressure hose to pressure accumulator. Then remove tape holding pressure hose to outer tub.
- q. Grasp outer tub and lift complete tub assembly (with transmission, balance ring and pivot dome attached) straight up and out of washer cabinet.
- r. Turn outer tub upside-down and set on protective padding.
- s. Remove screws and lockwashers holding each support leg to outer tub. Refer to *Figure 44*. Then lift transmission, balance ring and pivot dome off tub.

**NOTE:** To prevent porcelain damage, leg plates must be installed on both sides of outer tub flange when reinstalling support legs. (The thinner plate must be installed between leg and tub flange and the thicker plate must be installed on outside of tub flange.) Do not overtighten the screws as this could cause stripping or porcelain damage.

- t. Turn outer tub upright and remove pressure accumulator and grommet.

**NOTE:** When installing grommet into outer tub, the thicker lip of grommet must be installed to outside of tub. Lubricate outer surface of large opening of accumulator with liquid soap to aid in assembling accumulator into the grommet.

### 47. DRIVE PULLEY AND HELIX

- a. Remove two screws from bottom edge of front panel. Refer to *Figure 21*.
- b. Pull bottom of panel away from washer until hold-down clips (located on top flange of panel) disengage from slots in cabinet top. Refer to *Figure 21*.



## WARNING

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

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

W003

- c. Remove two front mounting screws and loosen one rear mounting screw holding pump and bracket to washer base. Refer to *Figure 22*. Pivot entire pump assembly toward motor to loosen belt tension.
- d. Run belt off motor pulley, then remove belt from pump assembly.

**NOTE:** After installing belt, adjust belt. Refer to *Paragraph 58*.

- e. Reach in through front of motor mounting bracket and move idler lever to left to release tension on belt.

**IMPORTANT:** Use caution when releasing idler lever tension. If idler lever spring or helper spring are overstretched, it will affect the washer operation.

- f. While holding idler lever, reach in and around right side of motor and run belt off right side of large drive pulley. Refer to *Figure 23*.
- g. Remove belt from motor pulley and pull belt out through front of motor mounting bracket.

**IMPORTANT:** When reinstalling belt, there is no drive belt adjustment.

- h. Disconnect motor wire harness from base wire harness at disconnect blocks. Refer to *Figure 27*.
- i. Remove screw holding ground wire to washer base. Refer to *Figure 24*.
- j. Remove four screws holding motor and mounting bracket to washer base, then lift complete assembly out of washer. Refer to *Figure 24*.

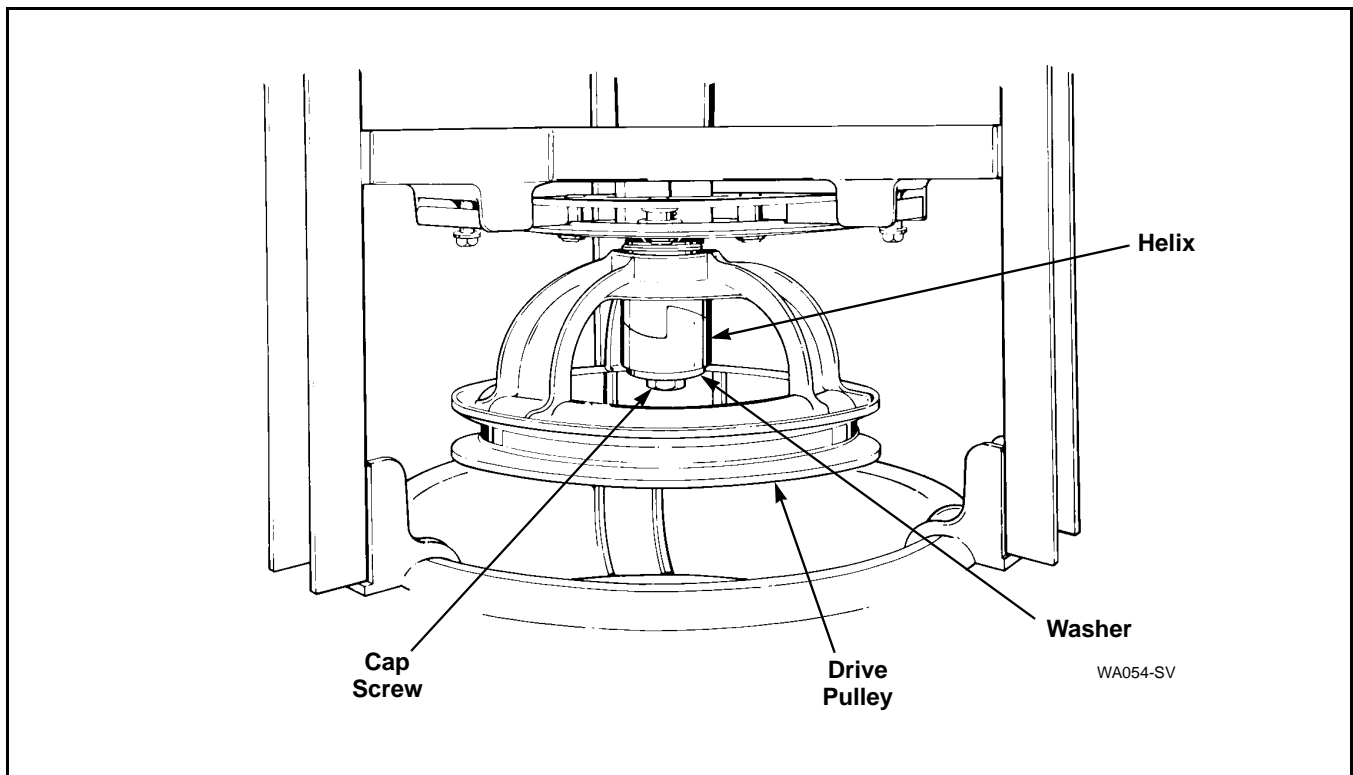


Figure 45



## WARNING

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

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

W003

**NOTE:** When reinstalling motor and mounting bracket, positioning tab on right side of mounting bracket must be placed in positioning hole in base. Mounting bracket must be shifted toward rear of washer to its limit of travel within the mounting bracket attaching screws.

- Remove screw, washer and helix holding drive pulley to the input shaft of the transmission assembly. Refer to *Figure 45*.
- Remove drive pulley by tilting right side up and slide pulley out between right front and rear tub support legs.

**IMPORTANT:** Large flat washer must be in place between the spring and drive pulley when reassembling. Refer to *Figure 46* for assembly sequence.

**NOTE:** When reinstalling pulley, place a small amount of No. 03637P Lubricant to the top side of the drive pulley that will be contacting large flat washer. Lubricate helix ramps. Refer to *Figure 46*.

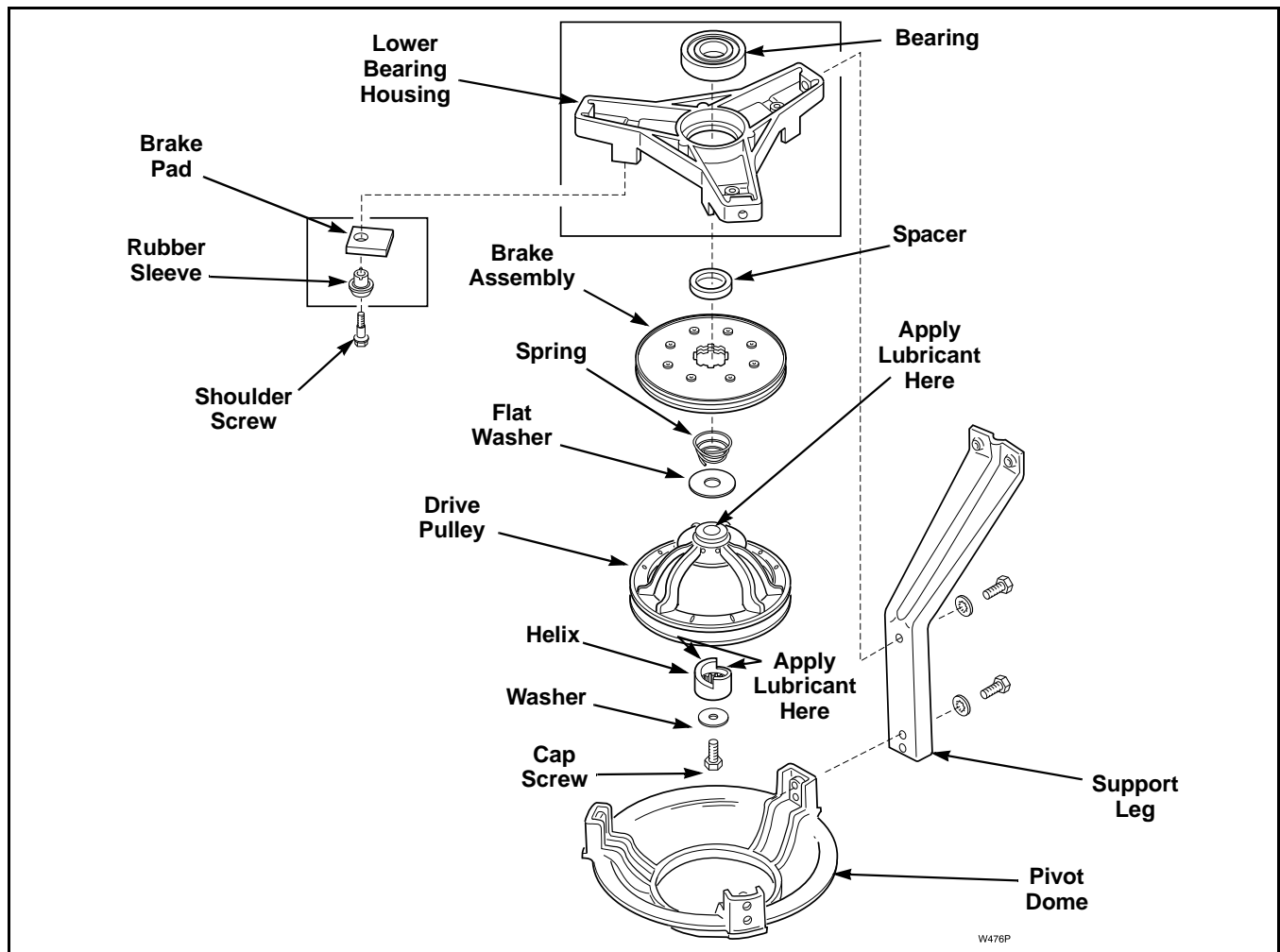


Figure 46



## WARNING

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

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

W003

### 48. BRAKE ASSEMBLY

- a. Remove drive pulley and helix. Refer to *Paragraph 47*.
- b. Using a right angle needle nose pliers, remove spring from around lower transmission tube (located inside the brake assembly). Refer to *Figure 46*.

**NOTE:** Remove spring by turning in a counterclockwise direction (looking from lower end of input shaft of transmission assembly).

- c. Remove three screws holding brake pads, rubber sleeves and brake assembly to lower bearing housing, then remove brake assembly, pads and spacer off bottom of transmission assembly. Refer to *Figure 46*.

**IMPORTANT:** When reinstalling brake assembly, we recommend replacing the three brake pads. DO NOT replace just the worn pads. Apply a small amount of No. 26594P Silicone Lubricant to both sides of each brake pad where it will contact the brake assembly.

**NOTE:** Refer to *Figure 46* for assembly sequence.

**IMPORTANT:** When installing spring, be sure it is inserted into groove in large splines of lower transmission tube. Use tool, No. 242P4, for installing the spring.

### 49. LOWER BEARING HOUSING

- a. Remove two screws from bottom edge of front panel. Refer to *Figure 21*.
- b. Pull bottom of panel away from washer until hold-down clips (located on top flange of panel) disengage from slots in cabinet top. Refer to *Figure 21*.
- c. Remove two cabinet top hold-down screws and hinge cabinet top or remove. Refer to *Paragraph 40*.
- d. Remove agitator hold-down cap (long post models only) and remove agitator. Refer to *Paragraph 28*.
- e. Disconnect filler hose from backflow preventer. Refer to *Figure 30*.

**NOTE:** When installing filler hose, white line on hose must be aligned with center line of backflow preventer. Refer to *Figure 30*.

- f. Reach in through front of motor mounting bracket and move idler lever to the left to release tension on belt.

**IMPORTANT:** Use caution when releasing the idler lever tension. If the idler lever spring or helper spring are overstretched, it will affect the washer operation.

- g. While holding idler lever, reach in and around right side of motor and run belt off right side of large drive pulley. Refer to *Figure 23*.
- h. Pull belt out toward front of washer.

**IMPORTANT:** When removing or reinstalling complete outer tub into washer (with washtub, transmission, balance ring and pivot dome attached), damage could occur to idler lever if idler spring and helper spring are left hooked to motor mounting bracket.

With idler spring and helper spring hooked to motor mounting bracket, idler lever extends out through rear of bracket. When removing or reinstalling complete tub assembly, idler lever is in the way and can be damaged (bent), or idler pulley could be chipped. A bent idler lever will cause misalignment of idler pulley with the drive belt, and a chipped idler pulley will damage belt.

We recommend that before removing or reinstalling the complete tub assembly, you unhook idler spring and helper spring and move idler lever out of the way. This will prevent the possibility of idler lever or pulley damage.

- i. Using No. 321P4 Spring Hook Tool, unhook five centering springs from lower edge of outer tub. Refer to *Figure 43*.

**IMPORTANT:** When removing the centering springs, mark on the side of the outer tub what notch the spring was hooked into. Springs must be placed in the same notch when reinstalling. Do not overstretch the springs.



## WARNING

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

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

W003

- j. Disconnect hoses between outer tub and pump assembly.

**IMPORTANT:** There will always be some water that will remain in the outer tub, therefore, before removing the hoses from the pump, the hoses will have to be drained to prevent spillage on the floor.

- k. Remove hose clamp holding pressure hose to pressure accumulator and remove hose. Then remove tape holding pressure hose to outer tub.
- l. Grasp outer tub and lift tub (with washtub, transmission, balance ring and pivot dome attached) straight up and out of washer cabinet.
- m. Turn complete tub assembly upside-down on protective padding.

**IMPORTANT:** When turning the complete tub assembly upside-down, be careful not to damage the out-of-balance switch trigger (located on outer tub cover).

- n. Remove screw, washer and helix holding drive pulley to transmission shaft. Refer to *Figure 45*.

- o. Remove drive pulley from transmission shaft. Refer to *Figure 45*.

- p. Remove needle bearing (if present), bearing races (if present) and large flat washer from transmission shaft. Refer to *Figure 45*.

- q. Use a right angle needle nose pliers and remove spring from around lower transmission tube (located inside brake assembly).

**NOTE:** Remove spring by turning in a counterclockwise direction (looking at bottom end of shaft).

**IMPORTANT:** When installing spring, be sure it is inserted into groove in large splines of lower transmission tube. Use spring tool, No. 242P4, for installing spring.

- r. Remove three screws and rubber sleeves holding brake pads to lower bearing housing. Refer to *Figure 46*.
- s. Lift brake assembly, pads and spacer off transmission tube.

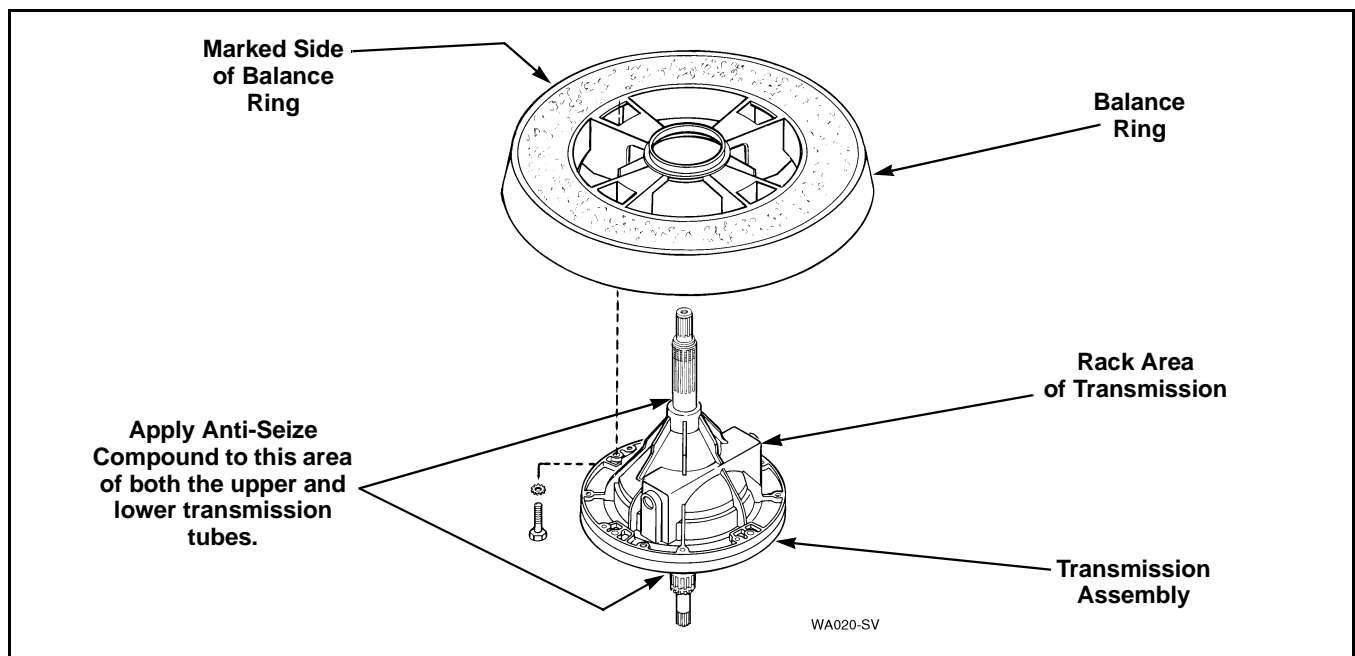


Figure 47



## WARNING

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

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

W003

- t. Remove three screws holding lower bearing housing to tub support legs. Refer to *Figure 46*.
- u. Rotate bearing housing past legs, then carefully lift bearing housing off transmission tube.

**NOTE:** It may be necessary to loosen one leg from pivot dome to rotate housing. It may require tapping lightly on housing to loosen it from the transmission tube.

**IMPORTANT:** When installing lower bearing housing, apply No. 27604P Anti-Seize compound to the area of transmission tube that will be contacting bearing. Refer to *Figure 47*.

### TO REMOVE BEARING

- a. Support bearing housing around outside diameter of bearing opening and carefully press bearing out of the housing.
- b. Clean all foreign material from inside diameter of bearing opening.
- c. Clean any foreign material from outside diameter of new bearing.
- d. Apply a retaining compound (such as Loctite) to outside diameter of new bearing and carefully press new bearing into housing (with sealed side facing up).

**IMPORTANT:** Press new bearing into housing by pressing on outer race of bearing only, and press until bearing bottoms out in housing.

### 50. TRANSMISSION ASSEMBLY

- a. Remove two screws from bottom edge of front panel. Refer to *Figure 21*.
- b. Pull bottom of panel away from washer until hold-down clips (located on top flange of panel) disengage from slots in cabinet top. Refer to *Figure 21*.
- c. Remove two cabinet top hold-down screws and hinge cabinet top or remove. Refer to *Paragraph 40*.
- d. Remove agitator. Refer to *Paragraph 28* for Short Post Drive Models; refer to *Paragraph 30* for Long Post Models.

- e. Loosen hose clamp and disconnect filler hose from backflow preventer. Refer to *Figure 30*. Then remove the eight clips holding cover to outer tub. Refer to *Figure 31*.

**NOTE:** When reinstalling filler hose, white line on hose must be aligned with center line of backflow preventer. Refer to *Figure 30*.

- f. Remove cover from outer tub and set off to the side to avoid damage, then remove old cover gasket.

**NOTE:** When installing outer tub cover, always use a new cover gasket. Lubricate the gasket with liquid soap to aid in assembly. Cover must be placed on outer tub so notch on top edge of outer tub cover is directly over left front clip hole in tub. Refer to *Figure 31*. Starting with this hole, place each spring clip in its respective hole and snap into place. Refer to *Figure 31* for proper clip installation.

- g. Remove four screws and washers holding washtub to hub. Refer to *Figure 32*.

**IMPORTANT:** Porcelain Washtub Models — Use caution when tightening cap screws to avoid chipping porcelain on washtub.

- h. Lift washtub and lint filter out of outer tub.

**IMPORTANT:** When removing washtub and lint filter, DO NOT lift up on lint filter as you could damage the filter. Grasp top flange of washtub and remove from outer tub.

- i. Depending on your model washer, follow the proper procedure for Short Post or Long Post Drive.

### SHORT POST MODELS

- (1) Remove drive bell. Refer to *Paragraph 29*, steps “a” through “k”.
- (2) Remove hex nut using No. 306P4 Hex Wrench.
- (3) Remove hub from splines on transmission tube.



## WARNING

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

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

W003

**NOTE:** It may be necessary to use a gear puller to remove hub.

- (4) Continue with Step “j”.

### LONG POST MODELS

- (1) Remove four cap screws holding agitator post to hub, and remove assembly from hub. Refer to *Figure 18*.
- (2) Straighten bent tab(s) on lockwasher, then remove hex nut using No. 306P4 Hex Wrench. Refer to *Figure 40*.
- (3) Remove hub from splines on transmission tube.

**NOTE:** It may be necessary to use a gear puller to remove hub.

- (4) Continue with step “j”.

- j. Remove old water seal from outer tub.

**IMPORTANT:** Use caution when removing the old water seal so as not to damage the tub flange or porcelain.

**NOTE:** When reinstalling or replacing the outer tub, we recommend installing a new No. 495P3 Water Seal Kit. Refer to *Paragraph 44*.

- k. Reach in through front of motor mounting bracket and move idler lever to the left to release tension on belt.

**IMPORTANT:** Use caution when releasing the idler lever tension. If the idler lever spring or helper spring are overstretched, it will affect the washer operation.

- l. While holding idler lever, reach in and around right side of motor and run belt off right side of large drive pulley.

**IMPORTANT:** When removing or reinstalling complete outer tub into washer (with transmission, balance ring and pivot dome attached), damage could occur to idler lever if idler spring and helper spring are left hooked to motor mounting bracket.

With idler spring and helper spring hooked to

motor mounting bracket, idler lever extends out through rear of bracket. When removing or reinstalling complete tub assembly, idler lever is in the way and can be damaged (bent), or idler pulley could be chipped. A bent idler lever will cause misalignment of idler pulley with the drive belt, and a chipped idler pulley will damage belt.

We recommend that before removing or reinstalling the complete assembly, you unhook idler spring and helper spring and move idler lever out of the way. This will prevent the possibility of idler lever or pulley damage.

- m. Using the No. 321P4 Spring Hook Tool, unhook the five centering springs from lower edge of outer tub. Refer to *Figure 43*.

**IMPORTANT:** When removing the centering springs, mark on side of outer tub what notch the spring was hooked into. Springs must be placed in same notch when reinstalling. Do not overstretch the springs. Mark the word “FRONT” on the front side of the outer tub so the complete tub module can be reinstalled in the same position.

- n. Disconnect hoses between outer tub and pump assembly.

**IMPORTANT:** There will always be some water that will remain in the outer tub; therefore, before removing hoses from the pump, the hoses will have to be drained to prevent water spillage on the floor.

- o. Loosen hose clamp holding pressure hose to pressure accumulator and remove hose. Then remove tape holding pressure hose to outer tub.
- p. Grasp outer tub and lift complete tub assembly (with transmission, balance ring and pivot dome attached) straight up and out of washer cabinet.
- q. Turn outer tub upside-down and set on protective padding.
- r. Remove screw, washer and helix holding drive pulley to transmission shaft. Then remove drive pulley, needle bearing, bearing races (if present) and large flat washer from transmission.



## WARNING

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

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

W003

- s. Using a right angle needle nose pliers, remove spring from around lower transmission tube (located inside the brake assembly).

**NOTE:** Remove spring by turning in a counterclockwise direction (looking at bottom end of shaft).

**IMPORTANT:** When reinstalling spring, be sure it is inserted into groove in large spline of transmission tube. Use spring tool, No. 242P4, when installing spring.

- t. Remove screws and lockwashers holding each support leg to outer tub, then lift pivot dome, brake assembly and lower bearing housing off transmission tube. Refer to *Figure 43*.

**NOTE:** It may be necessary to tap lightly on bearing housing to loosen it from transmission tube.

**IMPORTANT:** When installing lower bearing housing pivot dome and brake assembly, apply No. 27604P Anti-Seize Compound to area of transmission tube that will be contacting bearing. Refer to *Figure 47*.

To prevent porcelain damage, leg plates must be installed on both sides of outer tub flange when reinstalling support legs. (The thinner plate must be installed between leg and tub flange and the thicker plate must be installed on outside of tub flange.) Do not overtighten screws as this could cause stripping or porcelain damage.

- u. Remove four screws and lockwashers holding transmission assembly to balance ring.  
v. Lift transmission assembly straight up and out of balance ring and upper bearing.

**IMPORTANT:** When replacing or reinstalling transmission assembly, it is important that No. 27604P Anti-Seize Compound be applied to area of the transmission tubes where they will be contacting upper and lower bearings. Refer to *Figure 47*.

When reinstalling transmission assembly, note there is a mark located on outer edge of balance ring. This mark indicates the heavy side of ring.

**This heavy side must be installed opposite the rack of the transmission assembly. Refer to *Figure 47*. Carefully lower transmission through balance ring and upper bearing. DO NOT DROP OR LOWER TRANSMISSION ASSEMBLY INTO POSITION TOO HARD as this can cause bearing to move within bearing housing which will cause vibration, noise, wear or no spin.**

### TO DISASSEMBLE TRANSMISSION ASSEMBLY

Depending on your model, refer to *Figure 48, 49 or 50* for assembly sequence.

- a. Place transmission in a vise with input shaft end up. Clamp only the case, not the shaft.

**NOTE:** Supporting transmission in this manner will allow oil to collect in the transmission case.

- b. Before disassembling transmission halves, mark outer edge of transmission case and cover so the two can be reassembled in the same position.  
c. Place transmission in vise so three of the eight screws holding transmission case and cover together are in the 12, 4, and 7 o'clock positions.  
d. Loosen three screws, mentioned in step "c", approximately two turns. DO NOT remove these three screws at this time. Remove remaining five screws and lockwashers completely.  
e. Remove transmission assembly from vise.  
f. While holding transmission by cover end, gently tap each of the three remaining screws until two halves separate. Place assembly back into vise (cover end up) and remove three screws and lockwashers.  
g. Remove reduction gear from the transmission cover.

**NOTE:** If present, remove the screw and washer holding the reduction gear to the transmission cover.

- h. Remove special screw, lockwasher and flat washer holding drive pinion to input shaft.





## WARNING

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

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

W003

**NOTE:** To prevent input shaft from turning during removal of special screw, place a helix onto shaft and hold helix with a locking pliers.

- i. Remove drive pinion from input shaft using a hammer and punch to drive shaft out of pinion.
- j. Remove input shaft and square washer from transmission cover.

**IMPORTANT:** Carefully examine area inside cover tube (seals, bearing, roller clutch, etc.). If oil is present between seals and bearing, or roller clutch is bad, it will require replacing complete transmission cover assembly. The individual components are not available separately.

- k. Remove internal gear, slide and rack from transmission case.
- l. Remove transmission case from vise and drain oil.
- m. Remove retainer ring from output shaft.
- n. Using a hammer and punch, carefully drive shaft out of agitator pinion.
- o. Carefully remove output shaft and washer (Short Post Models) or coupling and shaft and shim washers (Long Post Models) from transmission case.

**IMPORTANT:** Carefully examine area inside transmission case tube (seals, bearings, etc.). If oil is present between seals and bearings, it will require replacing complete transmission case. Seals and bearings are not available separately.

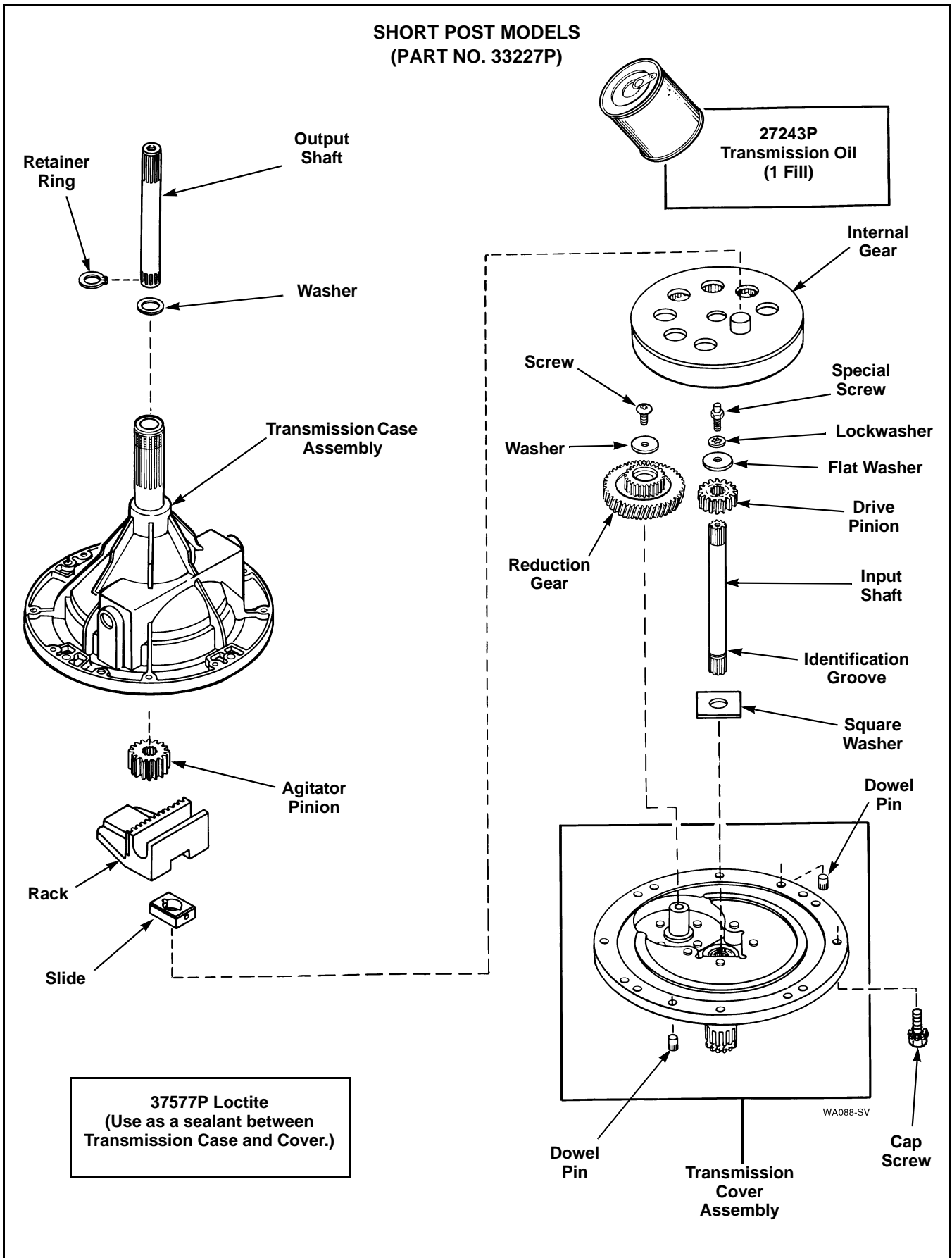


Figure 48

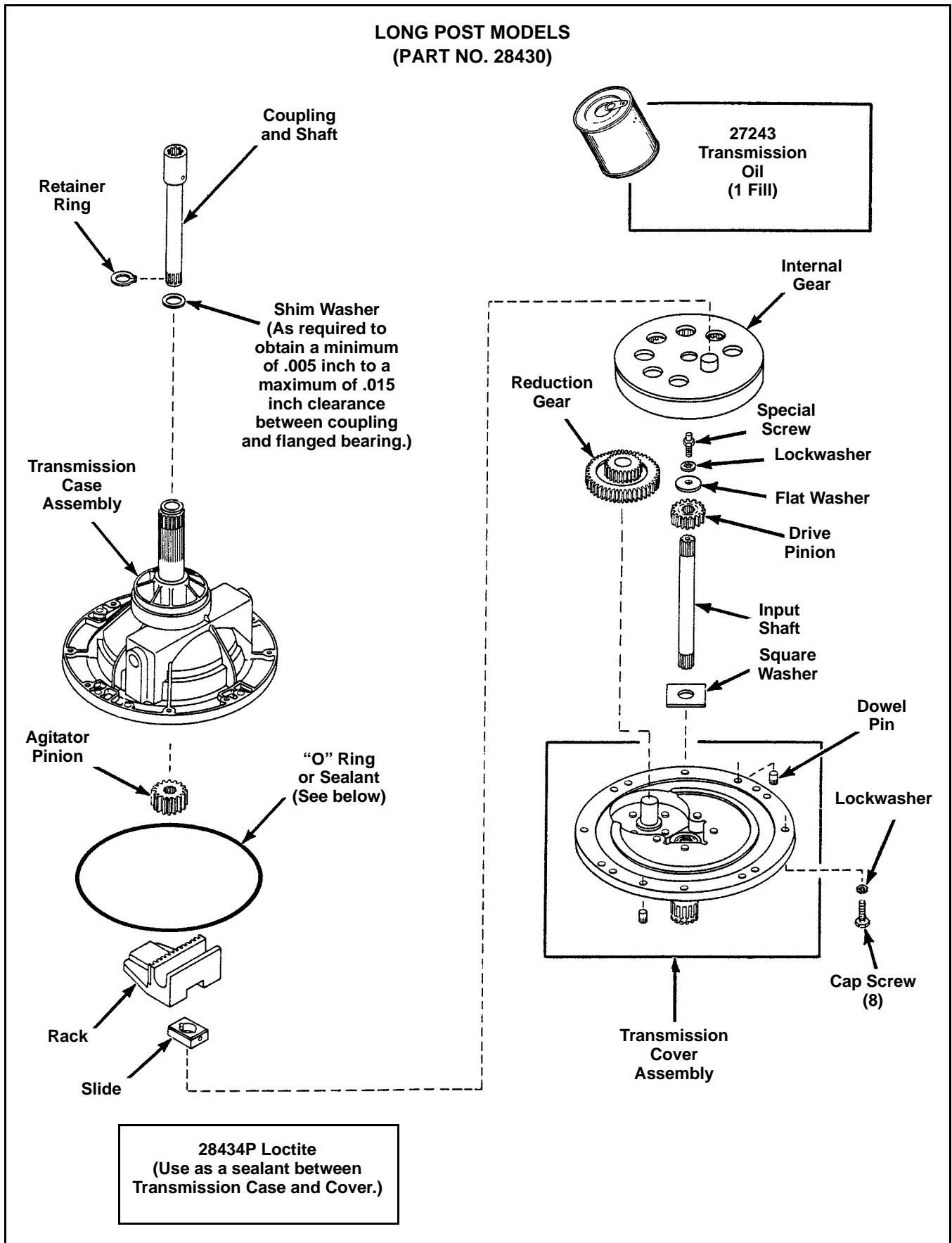


Figure 49

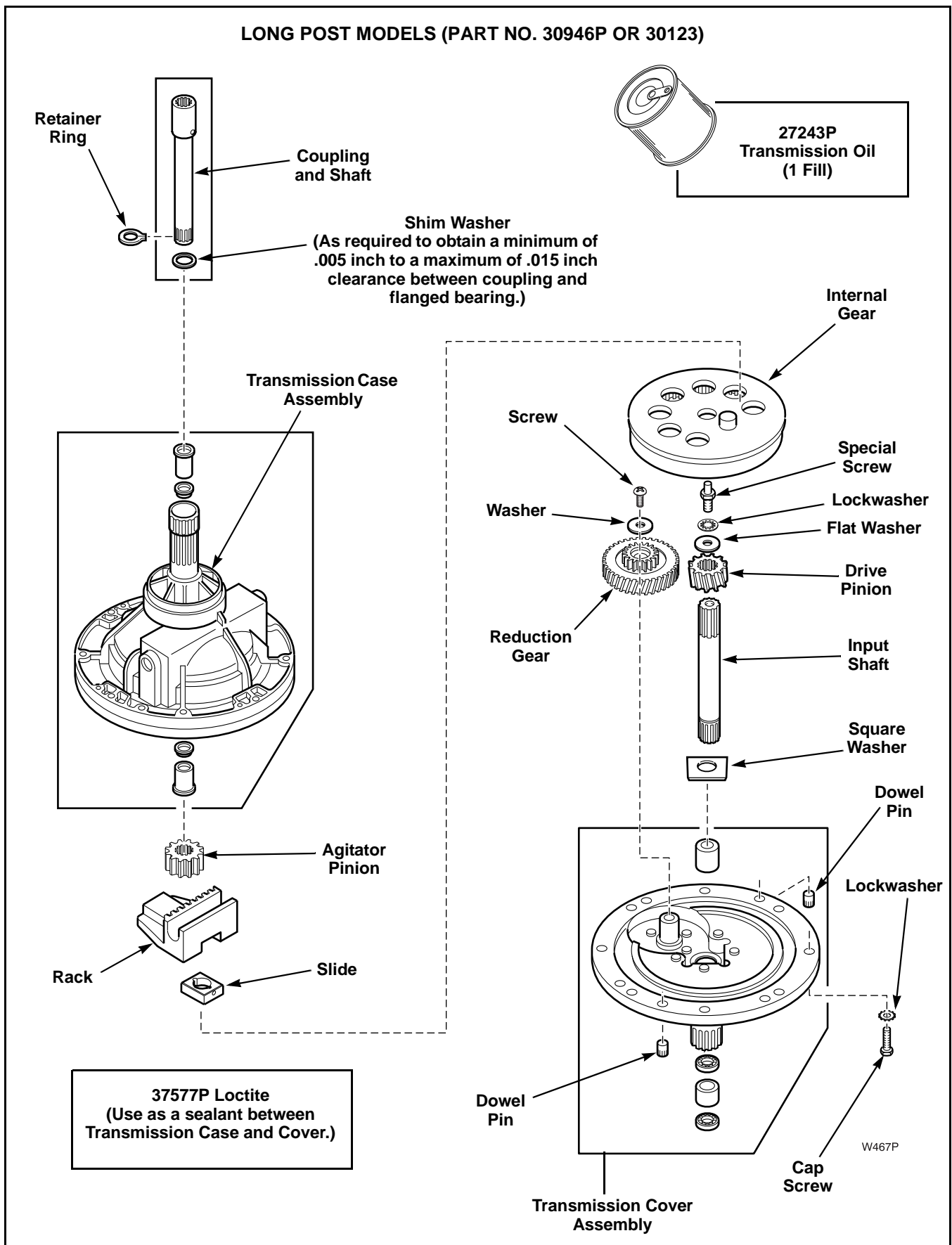


Figure 50



## WARNING

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

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

W003

### TO REASSEMBLE TRANSMISSION ASSEMBLY

**IMPORTANT:** Wash all the individual components in a cleaning solution (mineral spirits). Wipe inside of transmission case and cover with a clean cloth, dampened with cleaning solution, to remove any impurities. **DO NOT** allow cleaning solution to come in contact with bearings and seals in transmission case and/or cover.

a. **Short Post Models –**

Place washer over shaft and carefully insert output shaft into the transmission case.

**Long Post Models –**

Carefully insert output shaft and coupling into the transmission case.

**NOTE:** If a new shaft and coupling are installed, then you will have to use shim washers as required to obtain a minimum clearance of .005 inch (.015 inch maximum) between the flanged bearing and coupling on output shaft. Shaft must be free to rotate.

- b. Place agitator pinion on splines of output shaft and press onto shaft.
- c. Install retainer ring on output shaft.
- d. Place transmission case into a vise. Clamp only the case, not the shaft.
- e. Place rack inside transmission case with rack resting on bar in case. Agitator pinion must engage the rack.

**NOTE:** Put a light film of transmission oil on bar where rack will slide back and forth.

- f. Position slide in slot on rack.

**NOTE:** Put a light film of transmission oil in slot on rack, also, transmission oil should be put in the track of the transmission case where internal gear will ride.

- g. Place internal gear into transmission case. Make sure guide pin on internal gear fits in hole on slide.

**IMPORTANT:** Never install a used internal gear in a new transmission case. If transmission case and internal gear are to be reused, be sure they are used as the original set.

- h. Refill transmission case with new No. 27243P Transmission Oil (one fill).
- i. To prevent seal damage, insert input shaft into cover starting at outer end of cover tube.

**IMPORTANT:** Short Post Models – End of shaft with identification groove must be facing outward. Refer to *Figure 48*. This is the end that will mate with the helix.

- j. Place the square washer over shaft and into position in the cover.
- k. Install drive pinion, flat washer, lockwasher and special screw onto input shaft.

**NOTE:** Use a thread locking compound on threads of special screw to prevent screw from loosening on the shaft.

**IMPORTANT:** Be sure mating surfaces of transmission cover and case are free of oil or any other foreign material.

- l. Place reduction gear on stub shaft of cover.

**NOTE:** If the reduction gear was originally held to the shaft with a screw and washer, then use a thread locking compound on the threads of the screw to prevent screw from loosening on the shaft and install screw and washer.

- m. Depending on the transmission assembly being repaired, use either “O”-ring or apply a bead of sealant, No. 37577P Loctite, on mating surface of transmission case.

**IMPORTANT:** The bead of sealant should be no more than 1/16 inch in diameter. **DO NOT** allow any sealant to contact edges of internal gear (sealer may damage moving parts).



## WARNING

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

W003

- n. Carefully place transmission cover over top of transmission case. Make sure holes in cover line up with holes in case, and marked edges of two halves are aligned.
- o. Carefully lower cover onto case.
- p. Secure two transmission halves together, using eight screws removed during disassembly. Tighten eight screws evenly.
- q. Remove complete transmission assembly from vise.
- r. Apply Anti-Seize Compound, No. 27604P, to smooth area of both transmission tubes that will be contacting upper and lower bearings.

### 51. BALANCE RING

- a. Remove transmission assembly. Refer to *Paragraph 50*, steps “a” through “u”.
- b. Lift balance ring off outer tub.

**IMPORTANT: When reinstalling balance ring, note there is a mark located on outer edge of balance ring. This mark indicates the heavy side of ring. This heavy side must be installed opposite the rack of the transmission assembly. Refer to *Figure 47*.**

### 52. UPPER BEARING ASSEMBLY

- a. Remove transmission assembly. Refer to *Paragraph 50*, steps “a” through “u”.
- b. Remove screws and lockwashers holding each support leg to outer tub. Refer to *Figure 43*. Lift complete pivot dome (with drive pulley, brake assembly, lower bearing housing, transmission assembly and balance ring attached) off outer tub.

**NOTE: To prevent porcelain damage, leg plates must be installed on both sides of outer tub flange when reinstalling support legs. (The thinner plate must be installed between leg and tub flange and the thicker plate must be installed on outside of tub flange.) Do not overtighten the screws as this could cause stripping or porcelain damage.**

- c. Remove three screws holding upper bearing and housing to bottom of outer tub. Refer to *Figure 51*.

**NOTE: Replace bearing and housing as an assembly, and make sure flinger is properly positioned between outer tub and bearing assembly. Refer to *Figure 51*.**

### 53. SNUBBER PADS

- a. Remove transmission assembly. Refer to *Paragraph 50*, steps “a” through “p”.
- b. Scrape the old snubber pads from the washer base.
- c. Thoroughly clean the area of the base where the new snubber pads will be installed.

**NOTE: Use a cleaning agent, such as lacquer thinner, for removing grease, old adhesive or any foreign materials from the washer base.**

#### TO INSTALL NO. 434P3 SNUBBER PAD KIT

- a. Brush approximately 3/4 inch wide strip of No. 510704P Adhesive to the dome area of the base where the new pads will be applied.

**IMPORTANT: Do not allow any adhesive to get on the surface of the new pads that will be contacting the pivot dome of the tub module.**

- b. Carefully align and apply the new snubber pad (with fluffed side up) to the base dome so they are equally spaced. Refer to *Figure 52*.

**IMPORTANT: The top edge of the snubber pads should be 1-7/16 inches from the lower part of the dome with a distance of 1/16 inch between the pads. Refer to *Figure 52*.**

**IMPORTANT: Before proceeding, allow the pads to adhere to the base for approximately 30 minutes.**

- c. Apply a liberal amount of No. 26594P Silicone Lubricant to the surface of the new pads that will contact the pivot dome.
- d. Carefully place the tub module back into washer making sure the pivot dome is positioned properly in dome recess of the washer base. Refer to *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.

W003

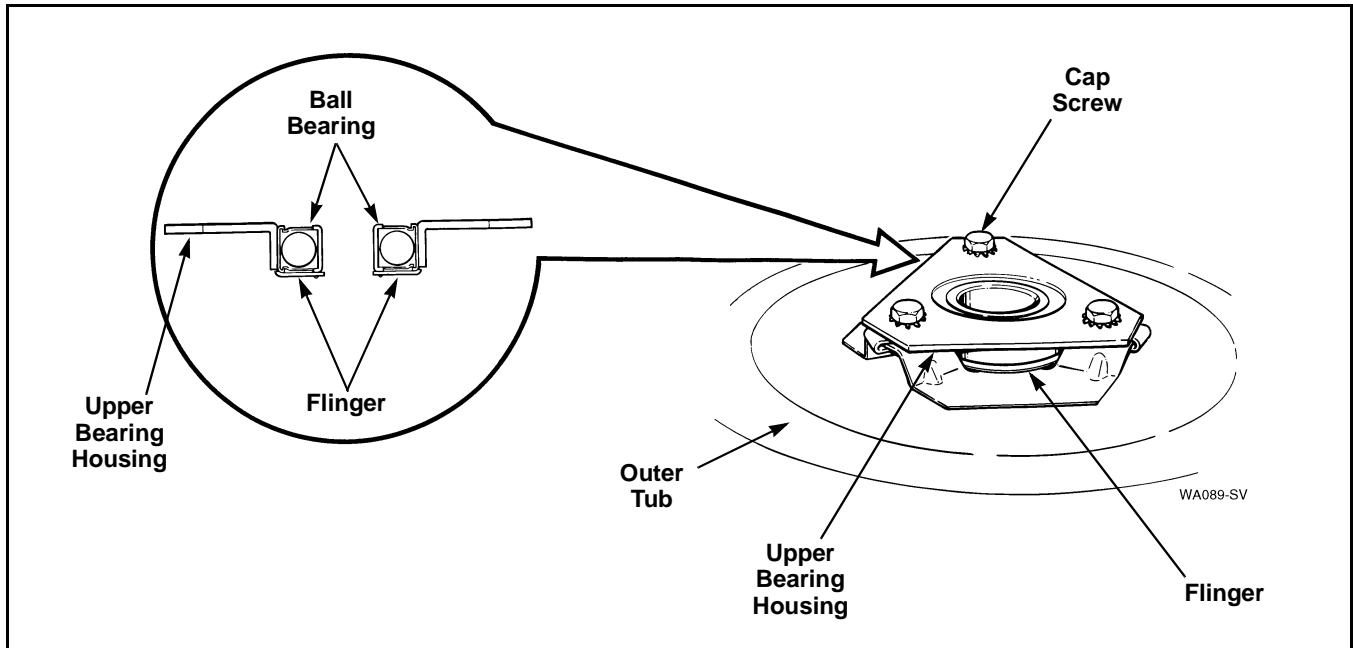


Figure 51

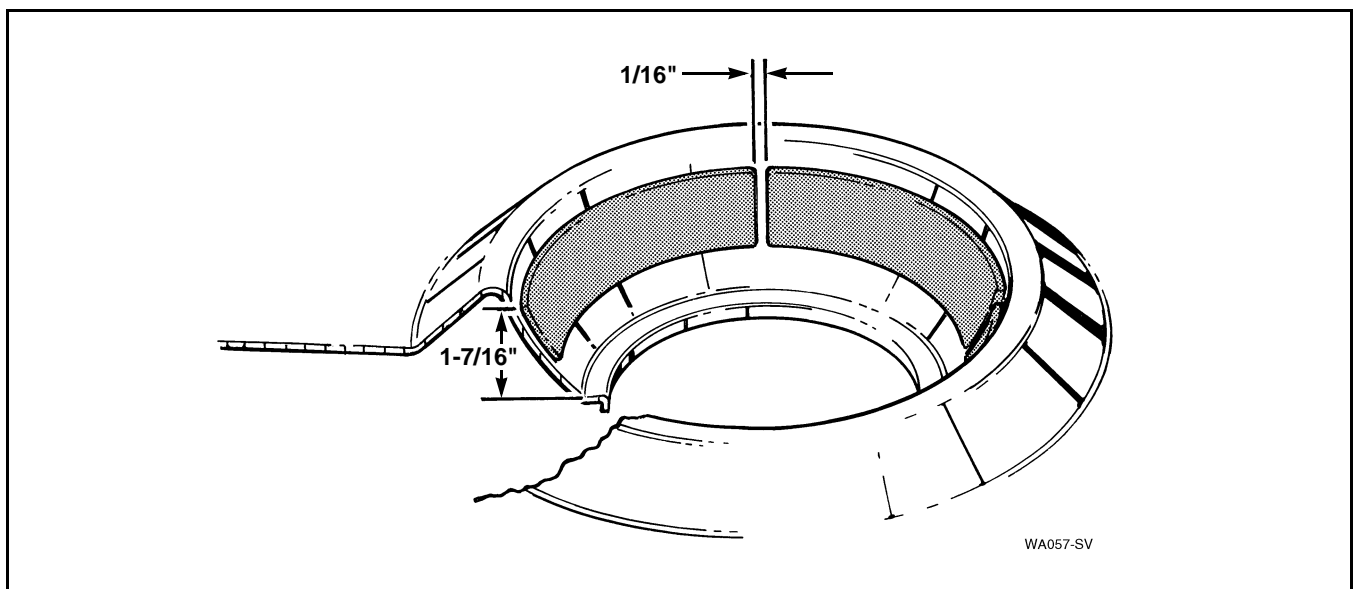


Figure 52

**NOTE:** Be sure the word “FRONT” (on outer tub) is facing toward the front of the washer.

- e. Use the No. 321P4 Spring Hook Tool and hook the five centering springs into the lower edge of the outer tub, starting with the rear springs.



## WARNING

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- Whenever ground wires are removed during servicing, these ground wires must be reconnected to ensure that the washer is properly grounded.

W003

**NOTE:** Springs must be hooked into the center of the two notches. Refer to *Figure 43*.

**NOTE:** Washer must be run through a complete cycle to make sure it is operating properly.

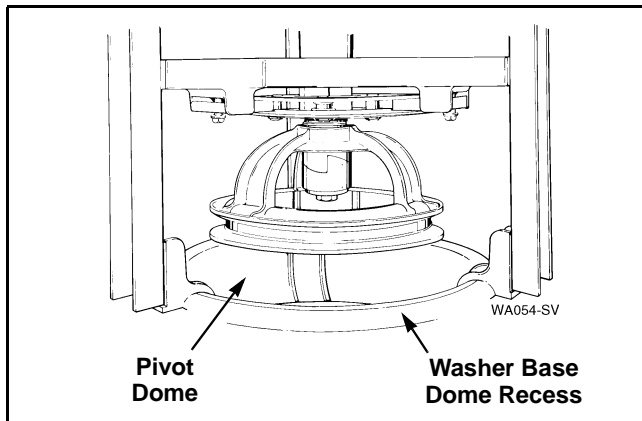


Figure 53

- f. Connect the hose from the outer tub to the pump and tighten hose clamp.
- g. Reconnect idler spring to clip on motor mounting bracket and helper spring into the back hole in the mounting bracket. Refer to *Figure 54*.
- h. Place drive belt on motor pulley, reach around right side of motor, starting with belt on right side of large pulley, run belt onto large pulley.
- i. Route the pressure hose through the wire harness clips. Refer to *Figure 30*. Then route pressure hose back up through hole in cabinet top.
- j. Reconnect the filler hose to the backflow preventer. Refer to *Figure 30*.

**NOTE:** When installing filler hose, white line on hose must be aligned with center line of backflow preventer. Refer to *Figure 30*. Hose clamp must be positioned as shown in *Figure 30* so it will not interfere with the cabinet top.

- k. Reinstall cabinet top.
- l. Remove control hood, reconnect pressure hose to pressure switch. Then reinstall control hood.
- m. Reinstall washer front panel.
- n. Reconnect washer power cord and open water supply valves.





## WARNING

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

W003

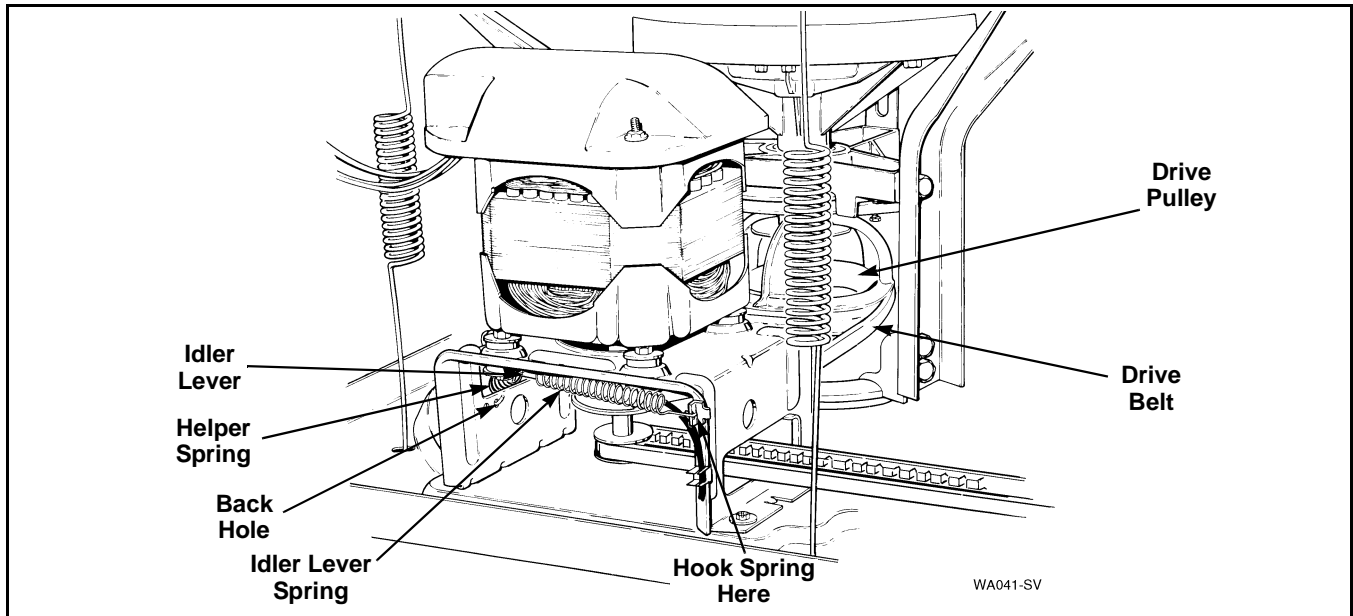


Figure 54



# Section 6

## Adjustments



### WARNING

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

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

W003

#### 54. TIMER KNOB INDICATOR

- With timer knob indicator pointing toward top OFF position, depress knob and turn clockwise one increment at a time, checking to see if washer begins filling by pulling knob out after each “click.”
- When washer begins to fill, immediately push knob in to stop washer.
- Depress red pointer and move it until the pointer is directly over the vertical line at the right side of the top OFF position.

#### 55. LEVELING LEGS

Refer to *Figure 55*.

**IMPORTANT:** Select a location, where the washer is to be installed, with a solid and level floor. **DO NOT** install the washer on a weak or spongy floor. The flexing of a weak floor may cause excessive vibration. Vibration can also be caused if washer is installed on carpeting or cushioned vinyl floor.

- Loosen locknuts and thread leveling legs into washer base as far as possible.
- Turn appropriate leveling leg(s) out of base only until washer is level. Keep washer as close to floor as possible.

**IMPORTANT:** All four legs must rest firmly on floor so weight of washer is evenly distributed. Washer must not rock. A good test is to place an out-of-balance load in the washtub, then start washer in the spin cycle. While washtub is spinning, adjust the leveling legs accordingly for minimum washer movement.

- After the washer has been leveled, tighten locknuts securely against bottom of washer base. If locknuts are not tight, the washer will not stay level during operation.
- Install rubber cups over leveling legs.

**IMPORTANT: DO NOT** move washer at any time unless locknuts are securely tightened and the styrofoam shipping brace is in place over the agitator (to prevent damage to washer components). **DO NOT** slide washer across floor once the leveling legs have been extended, as legs and base could become damaged.

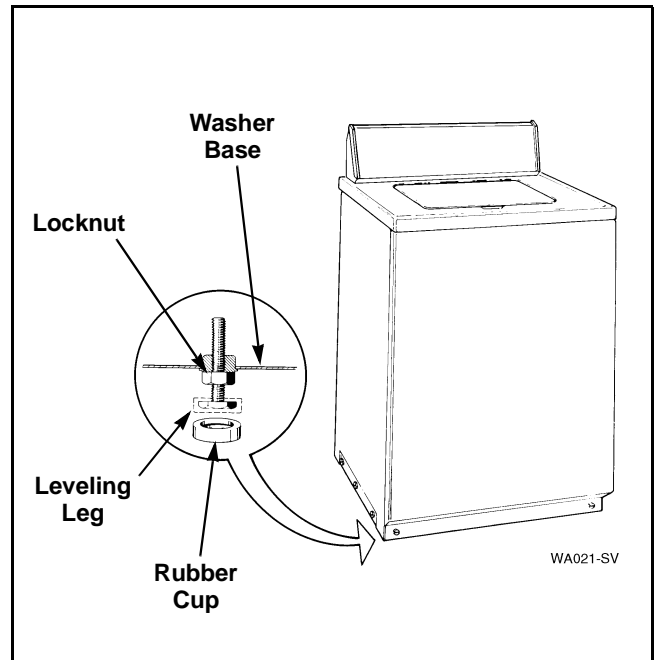


Figure 55



## 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.

W003

### 56. PRESSURE SWITCH

Refer to *Figure 56*.

**NOTE: DO NOT ADJUST PRESSURE SWITCH IF WASHER IS WITHIN THE WARRANTY PERIOD.**

The pressure switch on pressure-fill automatic washers is set at the factory for proper water fill levels. However, if there is a problem of overfilling or underfilling, the pressure switch can be adjusted.

The maximum water fill level can be increased by turning adjusting screw clockwise, and decreased by turning screw counterclockwise.

One quarter turn of the adjusting screw represents approximately one inch (2.54 cm) increase or decrease of water level in washtub.

**IMPORTANT: DO NOT turn adjusting screw more than 3/4 of a turn in either direction as the switch may be damaged and flooding could result.**

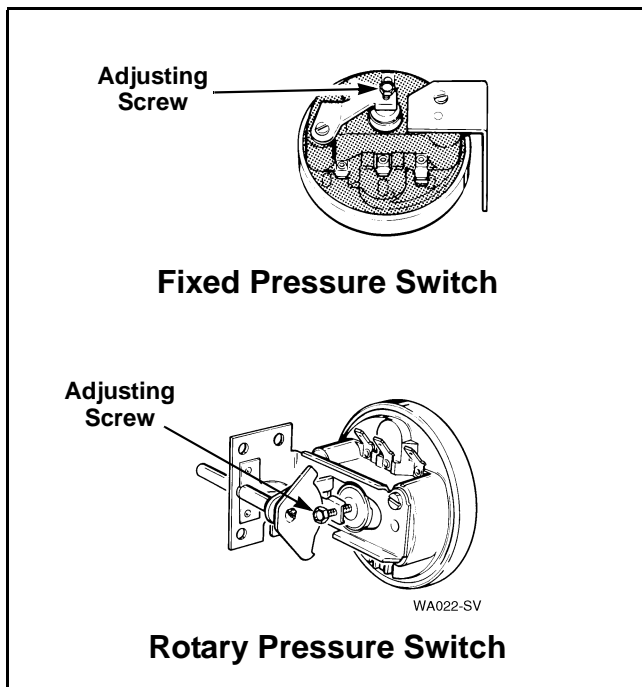


Figure 56

### 57. BELT (Agitate and Spin)

No belt adjustment is required.

**NOTE: After placing the motor and mounting bracket in the washer, start the four hold-down screws, but do not tighten them at this time. Pivot the left side of the mounting bracket as far back as it will go, then tighten the four screws. This mounting bracket adjustment is necessary to ensure the proper belt drive action.**

### 58. BELT (Pump)

**NOTE: Adjustment must be made after motor has been properly positioned. Refer to Paragraph 54.**

- a. Remove front panel. Refer to *Paragraph 32*.
- b. Loosen the two front mounting screws, then loosen the rear screw. Refer to *Figure 57*.

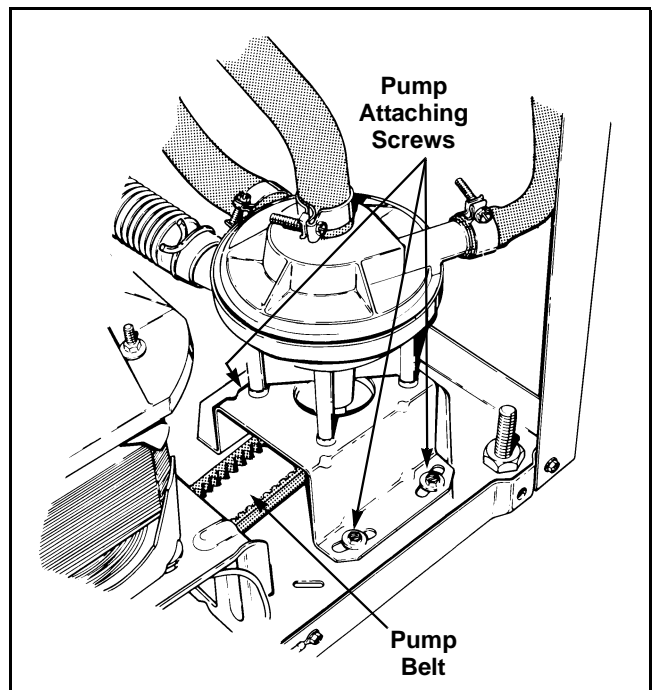


Figure 57



## WARNING

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

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

W003

- Shift front of pump mounting bracket to the right or left to obtain proper belt tension. Proper tension is when belt can be deflected approximately 1/2 inch (12.7 mm) from its normal position by applying moderate pressure (1-1/2 pounds – .675 kg) to a point midway between pulleys. Refer to *Figure 58*.
- After belt tension is obtained, tighten the three pump mounting bracket screws.

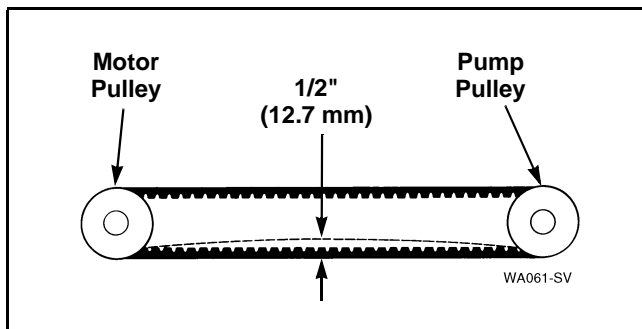


Figure 58

### 59. OUT-OF-BALANCE SWITCH TRIGGER

**NOTE:** The trigger is centered on the mounting screw at the factory. Refer to *Figure 59*.

- Remove front panel. Refer to *Paragraph 32*.
- Raise or remove cabinet top. Refer to *Paragraph 40*.
- Loosen screw holding trigger to tub cover, move trigger to the right (increases sensitivity) or to the left (decreases sensitivity). Refer to *Figure 59*.

**IMPORTANT:** If the trigger repeatedly trips the out-of-balance switch lever, check the centering of the agitator within the loading door opening. Centering springs may have to be positioned in the upper or lower notch (positioned in center notch at factory) to center the agitator within the door opening. Refer to *Figure 60*.

Example: If the springs are placed in the upper notch then the trigger must be moved to the extreme right for proper trigger operation.

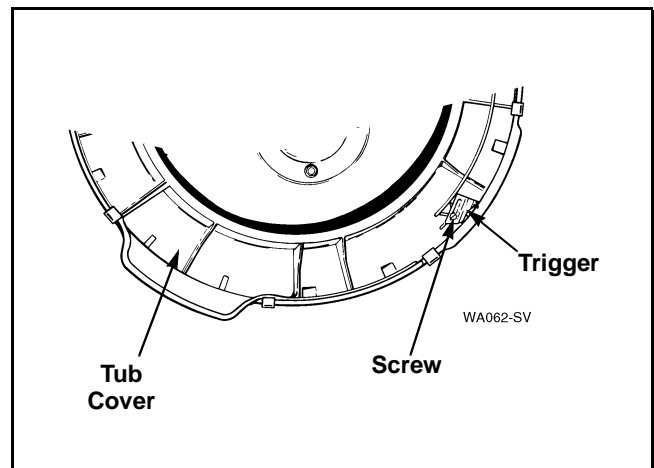


Figure 59

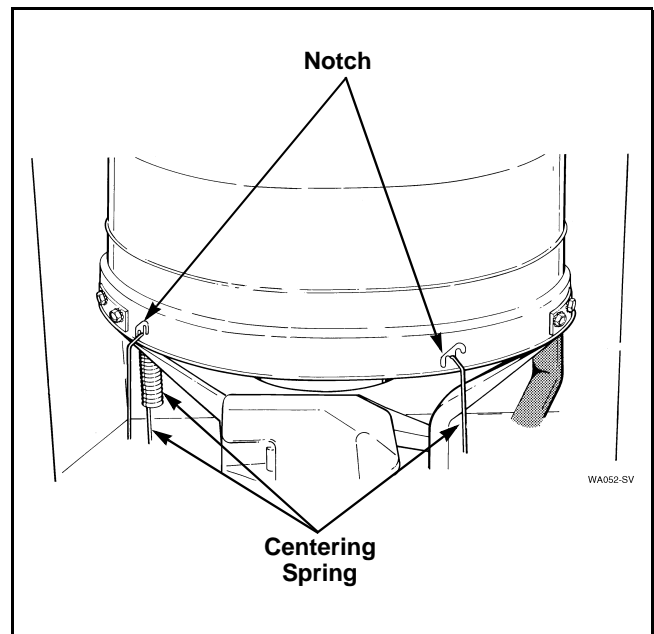



Figure 60



# Section 7

## Test Procedures

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

**60. TO CHECK CONTINUITY THROUGH MOTOR HARNESS AND MOTOR**

The items within the parentheses also are being checked along with the wires.

TP – Thermal Protector, MS – Motor Switch, SW – Start Winding, HW – High Winding, LW – Low Winding.

Wires	Motor Switch Normal	Ohm Readings	Motor Switch Operated Manually	Ohm Readings
Yellow to White	Continuity (TP)	0	Continuity (TP)	0
Red to Brown	Continuity (MS, SW)	4-5	OPEN	Infinite
Pink to White	Continuity (MS, HW, TP)	1-2	Continuity (MS, LW, TP)	3-4
Blue to White	Continuity (HW, TP)	1-2	Continuity (HW, TP)	1-2

**61. TO CHECK CONTINUITY THROUGH BASE HARNESS, CONTROL HARNESS AND TIMER FOR MOTOR START CIRCUIT**

Timer terminals involved are shown within the parentheses.

Wires	Timer Set for Spin	Timer Set for Agitation
Blue to Brown	Continuity (K & G)	OPEN
Blue to Red	OPEN	Continuity (K & F)
Red to Yellow	Continuity (F & L)	OPEN
Brown to Yellow	OPEN	Continuity (G & L)





# Section 8

## Cycle Sequence Charts

**NOTE: Times listed are approximate.**

Cycle	Function	Water Temp.	*Motor Speed	Time (Min. & Sec.)	Degrees
REGULAR 33:26 PLUS FILL	WASH, FILL or AGITATE	H, W, C	F or S	15:00	82.27
	PAUSE			1:14	6.75
	SPIN		F or S	1:00	5.48
	SPIN and SPRAY	COLD	F or S	1:00	5.48
	SPIN		F or S	1:40	5.48
	PAUSE			:18	1.65
	RINSE FILL (Timer Motor Runs)	W or C		:44	4.00
	PAUSE or FILL	W or C		:12	1.10
	RINSE FILL or AGITATE	W or C	F or S	5:28	30.00
	PAUSE			1:14	6.75
	SPIN			7:00	38.39
	OFF			2:00	10.97
PERMANENT PRESS 26:45 PLUS FILL	WASH, FILL or AGITATE	H, W, C	F or S	9:00	49.36
	PAUSE			1:14	6.75
	COOL DOWN (Press Sw. Controlled)	SPIN (Partial Drain)	FAST	1:00	5.48
		FILL	COLD	Variable	
	PAUSE			:50	4.55
	SPIN		F or S	:40	3.62
	SPIN and SPRAY	COLD	F or S	1:00	5.48
	SPIN		F or S	:40	3.67
	PAUSE			:18	1.65
	RINSE FILL (Timer Motor Runs)	W or C		:44	4.00
	PAUSE or FILL	W or C		:12	1.10
	RINSE FILL or AGITATE	W or C	F or S	4:38	25.39
	PAUSE			1:14	6.75
	SPIN		F or S	6:00	32.91
OFF			2:00	10.97	
TOTALS				65:38	360.00

\*ON SINGLE SPEED MODEL WASHERS, ALL SPEEDS ARE FAST.

KEY:

H = HOT

W = WARM

C = COLD

**TIMER NO. 28918 CYCLE SEQUENCE  
(TWO CYCLE)**

**Section 8 Cycle Sequence Charts**

**NOTE: Times listed are approximate.**

Cycle	Function	Water Temp.	*Motor Speed	Eaton Timer		Mallory Timer		
				Time (Min. & Sec.)	Degrees	Time (Min. & Sec.)	Degrees	
PERMANENT PRESS 28:13 PLUS FILL	WASH, FILL or AGITATE	H, W, C	FAST	9:00	32.79	9:00	33.16	
	PAUSE			1:50	6.68	1:49	6.69	
	COOL DOWN (Press Sw. Controlled)	SPIN (Partial Drain)		SLOW	:45	2.73	:45	2.76
		FILL	COLD		Variable		Variable	
	PAUSE			1:23	5.04	1:13	4.48	
	SPIN		SLOW	1:25	5.16	1:25	5.22	
	SPIN and SPRAY	COLD	SLOW	:40	2.43	:40	2.46	
	SPIN		SLOW	1:40	6.07	1:40	6.14	
	PAUSE			:27	1.64	:22	1.35	
	RINSE FILL (Timer Motor Runs)	W or C		1:02	3.76	1:12	4.42	
	PAUSE or FILL	W or C		:22	1.34	:15	.92	
	RINSE FILL or AGITATE	W or C	FAST	3:00	10.93	3:00	11.05	
	PAUSE			1:50	6.68	1:49	6.69	
	SPIN		FAST	5:51	21.31	5:45	21.18	
OFF				1:88	8.99	1:86	8.97	
DELICATE 24:37 PLUS FILL	WASH FILL or SOAK	H, W, C		1:09	4.19	1:00	3.68	
	WASH FILL or AGITATE	H, W, C	SLOW	:45	2.73	:45	2.76	
	WASH FILL or SOAK	H, W, C		2:00	7.29	2:00	7.37	
	WASH FILL or AGITATE	H, W, C	SLOW	:45	2.73	:45	2.76	
	WASH FILL or SOAK	H, W, C		2:00	7.29	2:00	7.37	
	WASH FILL or AGITATE	H, W, C	SLOW	:45	2.73	:45	2.73	
	PAUSE (Soak)			1:50	6.68	1:49	6.69	
	COOL DOWN (Press Sw. Controlled)	SPIN (Partial Drain)		SLOW	:45	2.79	:45	2.76
		FILL	COLD		Variable		Variable	
	PAUSE			1:23	5.04	1:13	4.48	
	SPIN		SLOW	1:30	5.46	1:30	5.53	
	SPIN and SPRAY	COLD	SLOW	:40	2.43	:40	2.46	
	SPIN		SLOW	1:35	5.77	1:35	5.83	
	PAUSE			:27	1.64	:22	1.35	
	RINSE FILL (Timer Motor Runs)	COLD		1:02	3.76	1:13	4.48	
	PAUSE or FILL	COLD		:22	1.34	:15	.92	
	RINSE FILL or AGITATE	COLD	SLOW	2:30	9.11	2:30	9.21	
PAUSE			1:50	6.68	1:49	6.69		
SPIN		SLOW	4:21	15.84	4:26	16.33		
OFF				1:88	8.99	1:86	8.97	
REGULAR 35:29 PLUS FILL	WASH FILL or AGITATE	H, W, C	FAST	15:00	54.65	15:00	55.26	
	PAUSE			1:50	6.68	1:49	6.69	
	SPIN		FAST	1:30	5.46	1:30	5.53	
	SPIN and SPRAY	COLD	FAST	1:00	3.64	1:00	3.68	
	SPIN		FAST	1:30	5.46	1:30	5.53	
	PAUSE			:27	1.64	:22	1.35	
	RINSE FILL (Timer Motor Runs)	W or C		1:02	3.76	1:12	4.42	
	PAUSE or FILL	W or C		:22	1.34	:15	.92	
	RINSE FILL or AGITATE	W or C	FAST	5:00	18.22	4:50	17.81	
	PAUSE			1:50	6.68	1:49	6.69	
	SPIN		FAST	7:00	25.50	6:50	25.17	
OFF				1:88	8.99	1:85	8.91	
	TOTALS			98:49	360.00	97:43	360.00	

\*ON SINGLE SPEED MODEL WASHERS, ALL SPEEDS ARE FAST.

KEY:  
H = HOT  
W = WARM  
C = COLD

**TIMER NO. 31239 CYCLE SEQUENCE  
(THREE CYCLE)**

# Section 9

## Internal Wiring of Washer Motor Switch

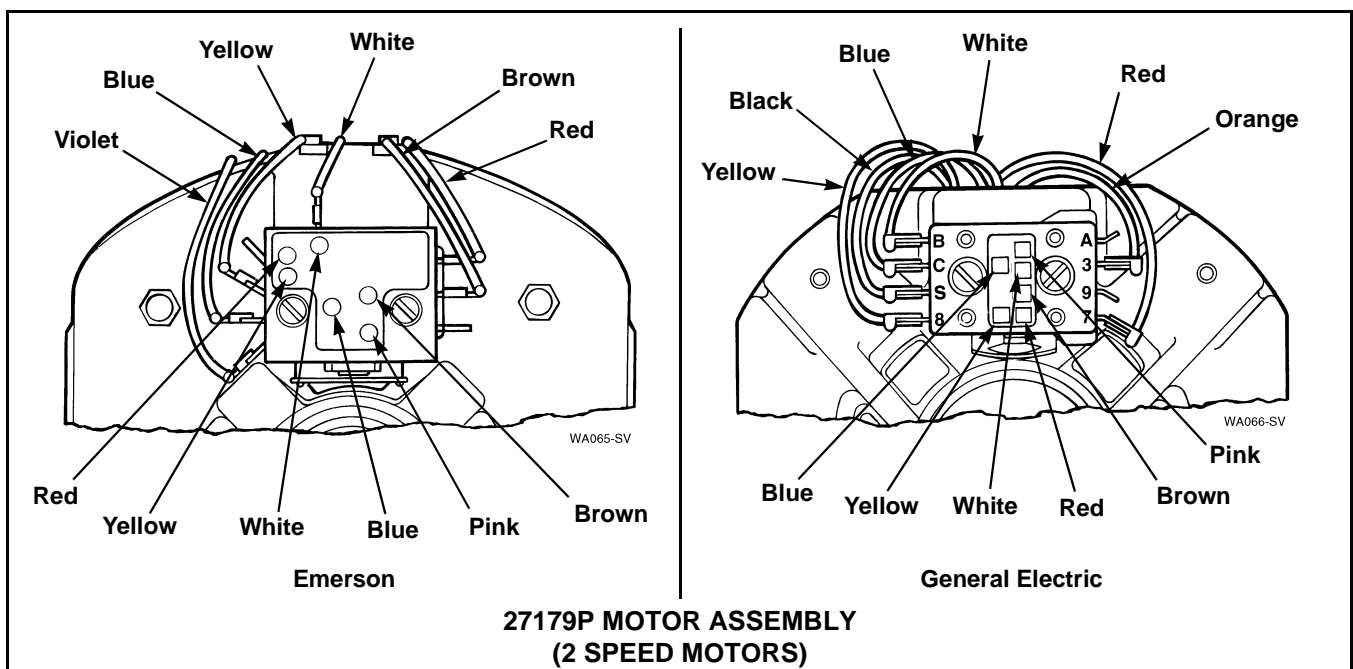
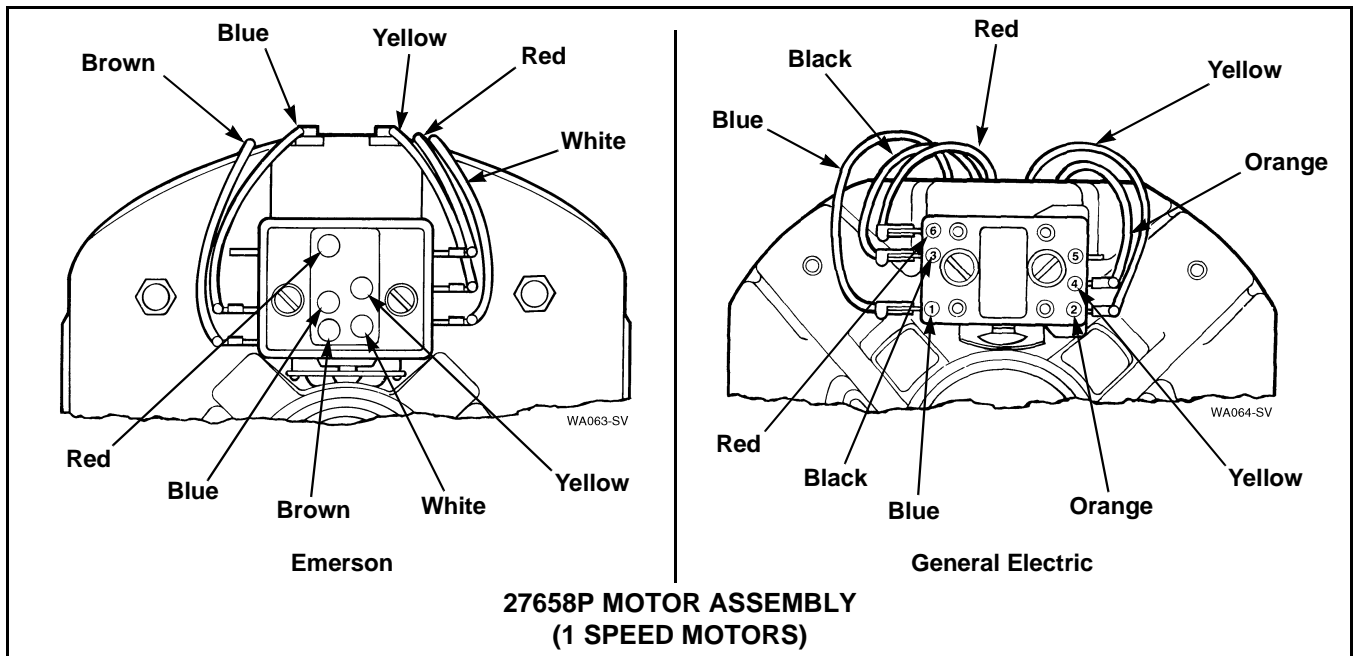


### WARNING

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

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

W003





# Section 10

## Wiring Diagrams



### **WARNING**

**Failure to install, maintain, and/or operate this machine according to the manufacturer's instructions may result in conditions which can produce bodily injury and/or property damage.**

W030

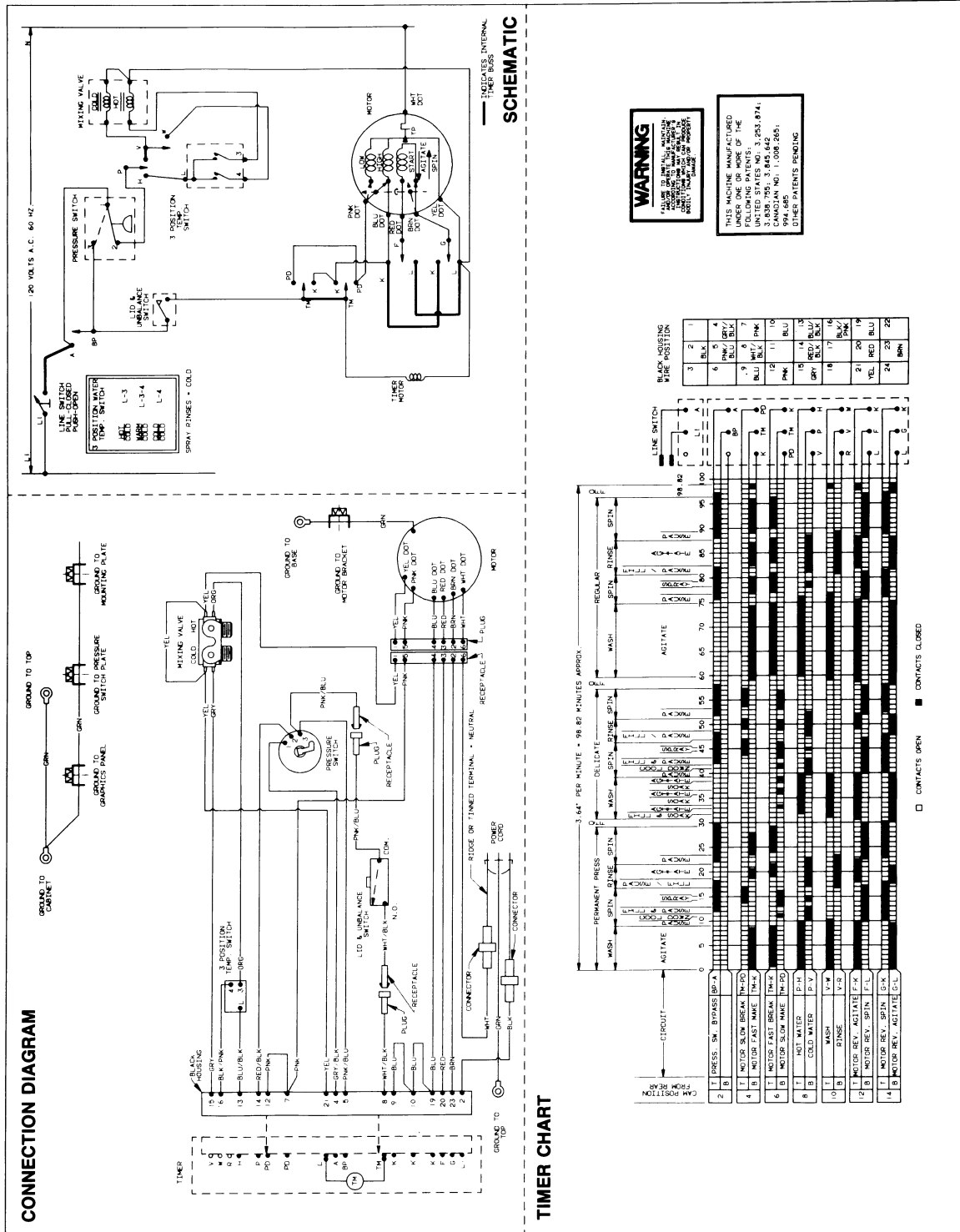
**WIRING DIAGRAMS AND SCHEMATICS  
FOUND ON THE FOLLOWING PAGES  
ARE FOR MODELS COVERED IN THIS MANUAL.**



# WARNING

Failure to install, maintain, and/or operate this machine according to the manufacturer's instructions may result in conditions which can produce bodily injury and/or property damage.

W030



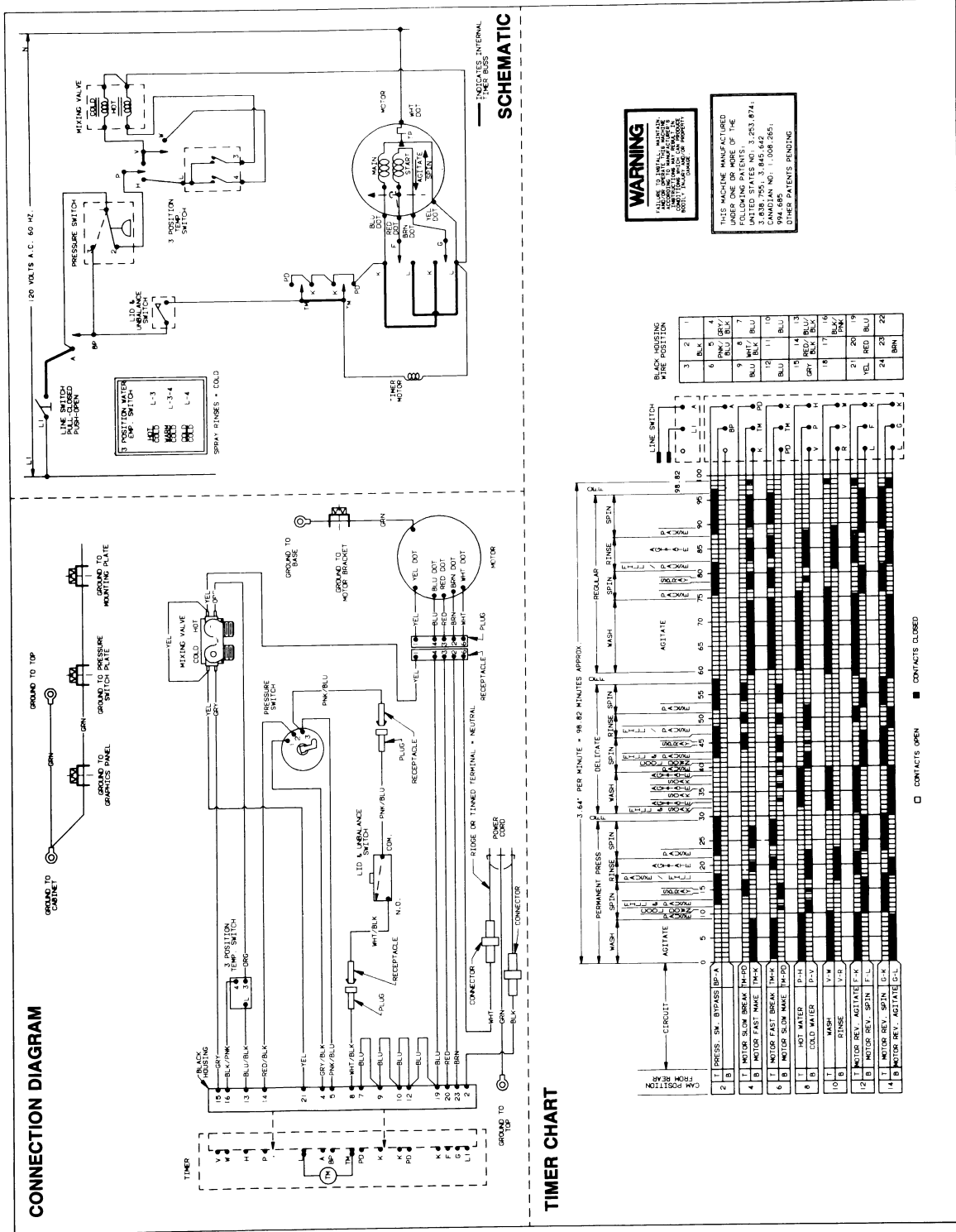
MODELS BA4121 AND BA4120



# WARNING

Failure to install, maintain, and/or operate this machine according to the manufacturer's instructions may result in conditions which can produce bodily injury and/or property damage.

W030



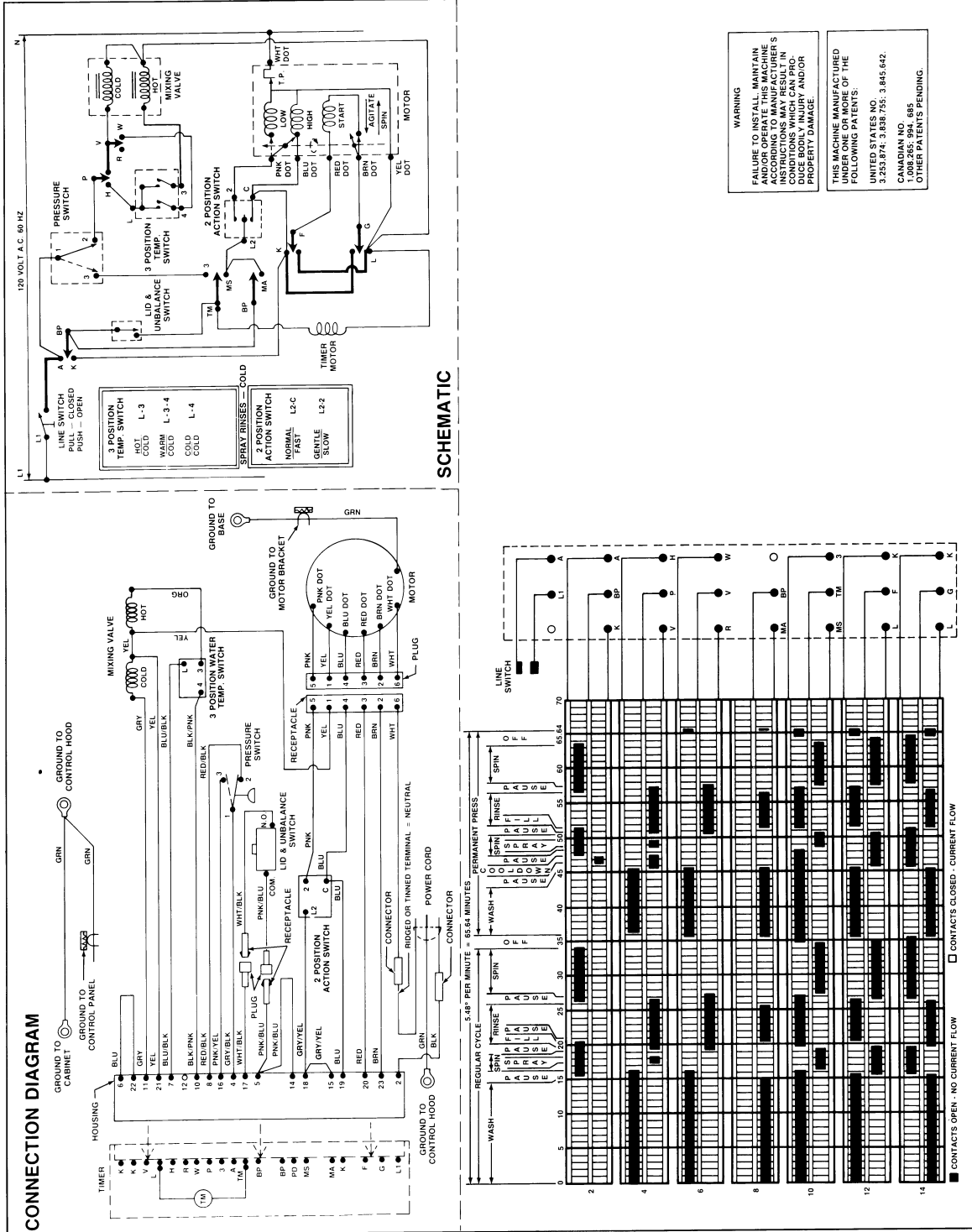
MODEL BA3110



# WARNING

Failure to install, maintain, and/or operate this machine according to the manufacturer's instructions may result in conditions which can produce bodily injury and/or property damage.

W030



**WARNING**  
 FAILURE TO INSTALL, MAINTAIN AND/OR OPERATE THIS MACHINE ACCORDING TO THE MANUFACTURER'S INSTRUCTIONS MAY RESULT IN CONDITIONS WHICH CAN PRODUCE BODILY INJURY AND/OR PROPERTY DAMAGE.

THIS MACHINE MANUFACTURED UNDER ONE OR MORE OF THE FOLLOWING PATENTS:  
 UNITED STATES NO. 3,253,874; 3,839,755; 3,845,842;  
 CANADIAN NO. 1,167,685;  
 OTHER PATENTS PENDING.

MODELS BA2411 AND BA2410

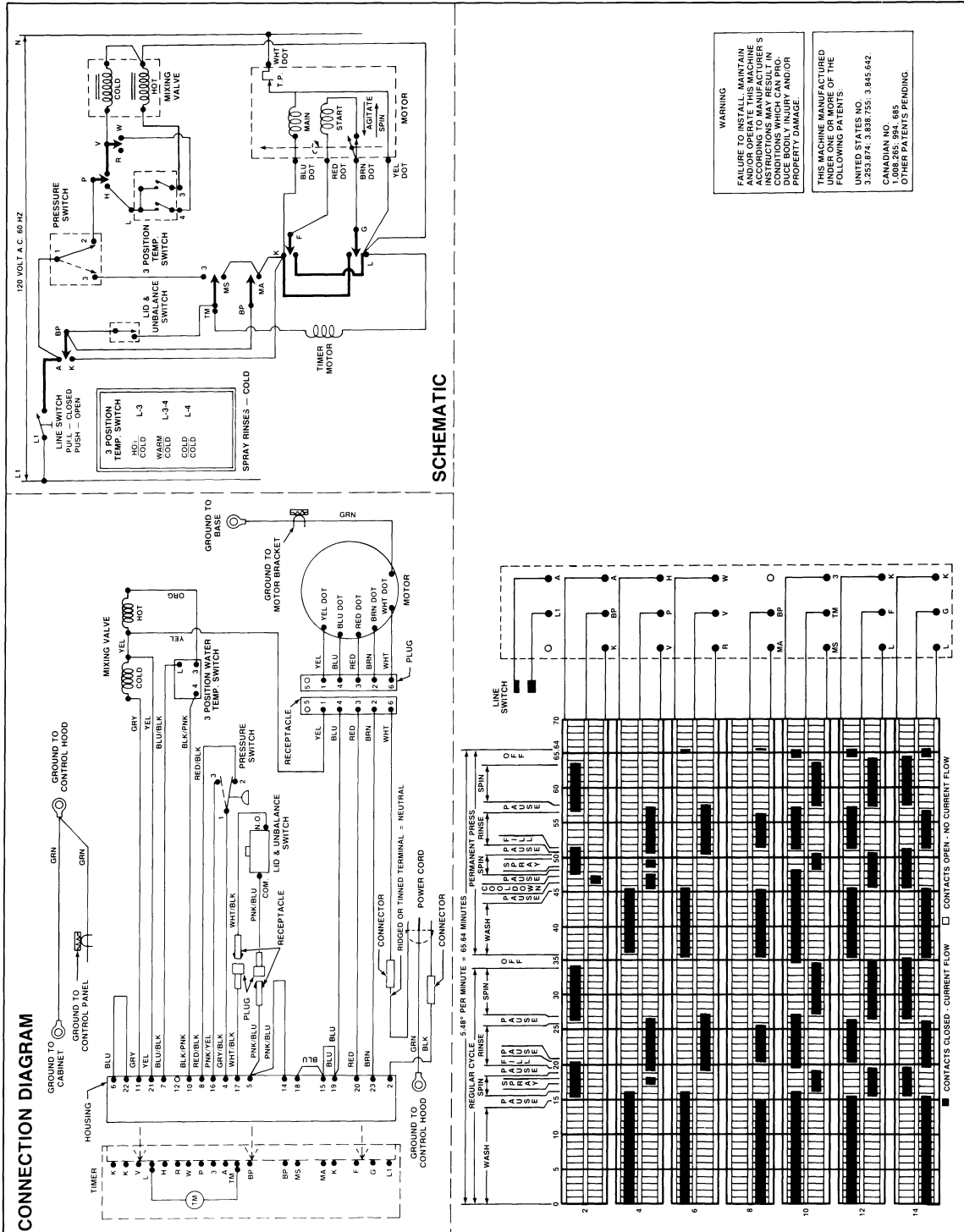




# WARNING

Failure to install, maintain, and/or operate this machine according to the manufacturer's instructions may result in conditions which can produce bodily injury and/or property damage.

W030



**WARNING**  
FAILURE TO INSTALL, MAINTAIN AND/OR OPERATE THIS MACHINE ACCORDING TO THE MANUFACTURER'S INSTRUCTIONS MAY RESULT IN CONDITIONS WHICH CAN PRODUCE BODILY INJURY AND/OR PROPERTY DAMAGE.

THIS MACHINE MANUFACTURED UNDER ONE OR MORE OF THE FOLLOWING PATENTS:  
UNITED STATES NO. 3,253,874; 3,838,755; 3,945,642  
CANADIAN NO. 1,185,848  
OTHER PATENTS PENDING

MODEL BA2300

