

**Raytheon** Appliances

# Commercial Automatic Washers

“CE” Approved  
Metered and Nonmetered  
Models

(See Page 2 for Model Numbers)

— SERVICE —

Commercial Laundry  
Technical Publications  
P O Box 990  
Ripon, WI 54971-0990

Part No. 37989  
11/96

**▲ 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 that you understand and have the skills to carry out.**

**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.**

W006R1

**▲ WARNING**

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

W007

**▲ CAUTION**

**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.

**Recognize Safety Symbols, Words and Labels**

**▲ DANGER -- Immediate hazards which WILL result in serious injury or death.**

**▲ WARNING -- Hazards or unsafe practices which COULD result in serious injury or death.**

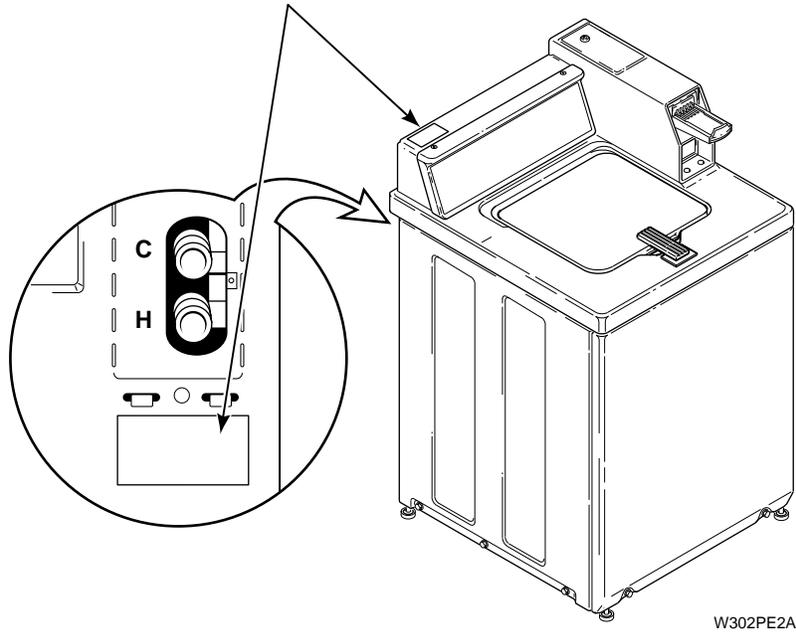
**▲ CAUTION -- Hazards or unsafe practices which COULD result in minor or moderate injury or product or property damage.**

W009

# Nameplate Location

## IMPORTANT

When writing for information on any washer, be sure to mention model and serial number. Model and serial number will be found on nameplate as shown.



# Model Identification

Information in this manual is applicable to these washer models.

Model Number	Nonmetered Model	Metered Model	Electronic Control Model	One-Speed Motor	Two-Speed Motor
EC2011WA3059	X			X	
EC2111WA3059		X		X	
EC2211LA3059 EC2211WA3059		X		X	
EC2921WA3059			X		X
ZC2111WA3059		X		X	
ZC2921WA3059			X		X

# Table of Contents

Nameplate Location .....	2
Model Identification .....	2

## SECTION I Grounding

1. Wall Receptacle Polarity Check .....	5
2. Power Cord to Control Hood, Control Hood to Control Panel Frame .....	5
3. Control Hood Wire Harness to Top Left Rear Corner Gusset of Cabinet .....	6
4. Wire Harness to Motor .....	6

## SECTION II Service Procedures

5. Control Panel Assembly .....	7
6. Timer Assembly .....	10
7. Meter or Timer Case Assembly .....	12
8. Drain Hose Elbow .....	13
9. Loading Door .....	13
10. Front Panel .....	15
11. Motor and Mounting Bracket .....	15
12. Idler Lever and Pulley .....	17
13. Motor Drive Pulley .....	18
14. Motor Switch .....	21
15. Agitator .....	22
16. Cabinet Top Assembly .....	22
17. Cabinet Top Assembly Removal .....	23
18. Agitator Drive Bell and Seal Kit, No. 36443P .....	24
19. Out-of-Balance Switch Assembly .....	27
20. Mixing Valve Assembly .....	28
21. Outer Tub Cover and Clothes Guard .....	29
22. Hub and Seal Kit, No. 495P3A .....	33
23. Outer Tub Assembly .....	35
24. Drive Pulley and Helix .....	37
25. Brake Assembly .....	39
26. Lower Bearing Housing .....	40
27. Transmission Assembly .....	40
28. Balance Ring .....	45
29. Upper Bearing Assembly .....	45
30. Snubber Pad and Isolator Assembly .....	46

**(continued)**

**SECTION III Adjustments**

31. Leveling Legs ..... 49  
32. Pressure Switch ..... 50  
33. Out-of-Balance Switch ..... 50  
34. Belt (Agitate and Spin) ..... 50

**SECTION IV Service Helps**

35. No Hot Water ..... 51  
36. No Cold Water ..... 51  
37. No Warm Water ..... 52  
38. Water Fill Does Not Stop at Proper Level ..... 52  
39. Timer Does Not Advance ..... 53  
40. Motor Does Not Run ..... 54  
41. No Agitation ..... 54  
42. Constant Agitation ..... 55  
43. Washer Smokes, Overheats, Cycles on Motor Thermal Overload Protector,  
Switch Actuator Kicks In and Out ..... 55  
44. Slow Spin or No Spin ..... 56  
45. Constant Spin ..... 56  
46. Washer Stops in Cycle; Quits After a Couple Loads; Is Intermittent ..... 57  
47. Washer is Locked Up or Binding ..... 57  
48. Outer Tub Does Not Empty ..... 58  
49. Excessive Vibration ..... 58  
50. Water Leaking From Outer Tub ..... 58

**SECTION V Cycle Sequence Charts ..... 59**

**SECTION VI Internal Wiring of Washer Motor Switch ..... 63**

# SECTION I

## 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

### 1. WALL RECEPTACLE POLARITY CHECK.

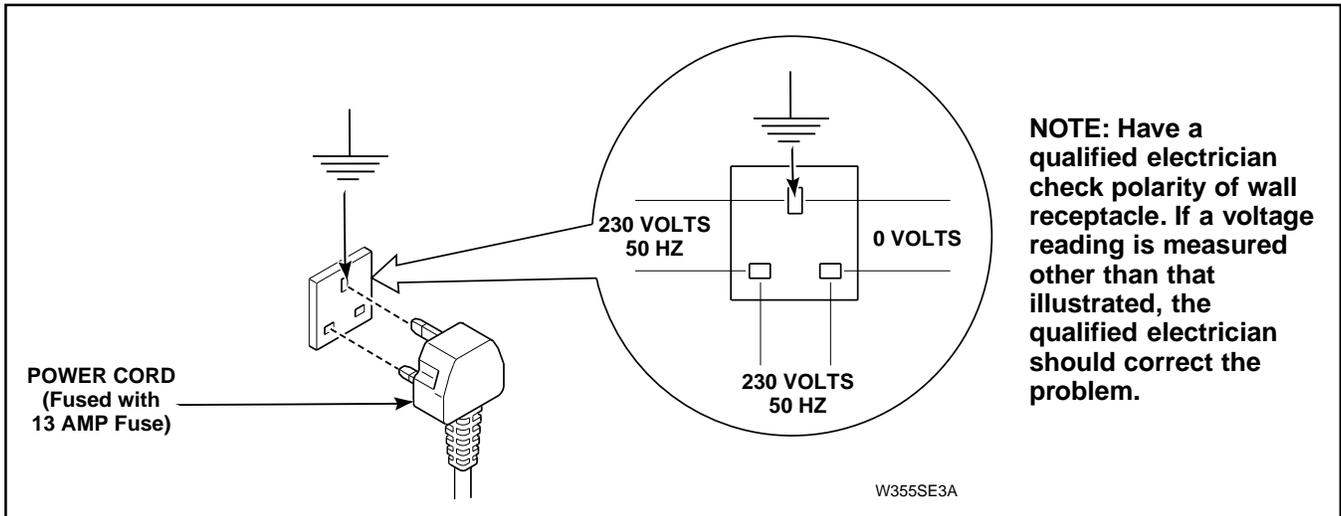


Figure 1

### 2. POWER CORD TO CONTROL HOOD, CONTROL HOOD TO THE CONTROL PANEL FRAME.

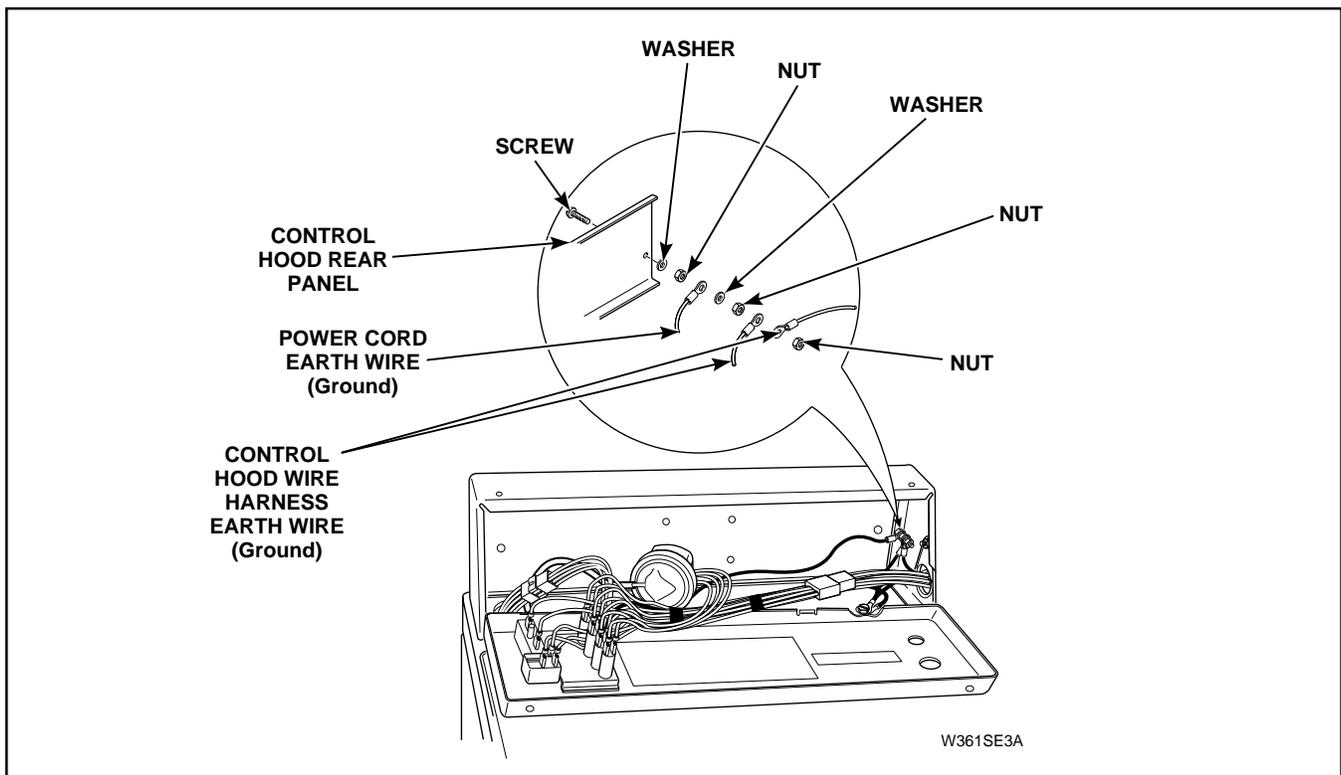


Figure 2

**▲ 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

3. CONTROL HOOD WIRE HARNESS TO TOP LEFT REAR CORNER GUSSET OF CABINET, *Figure 3.*

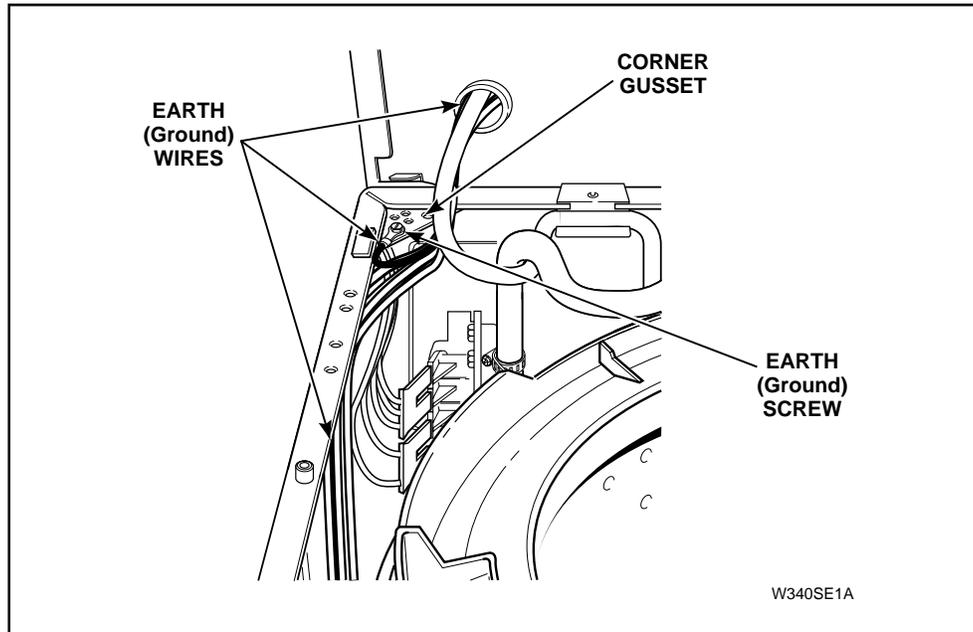


Figure 3

4. WIRE HARNESS TO MOTOR, *Figure 4.*

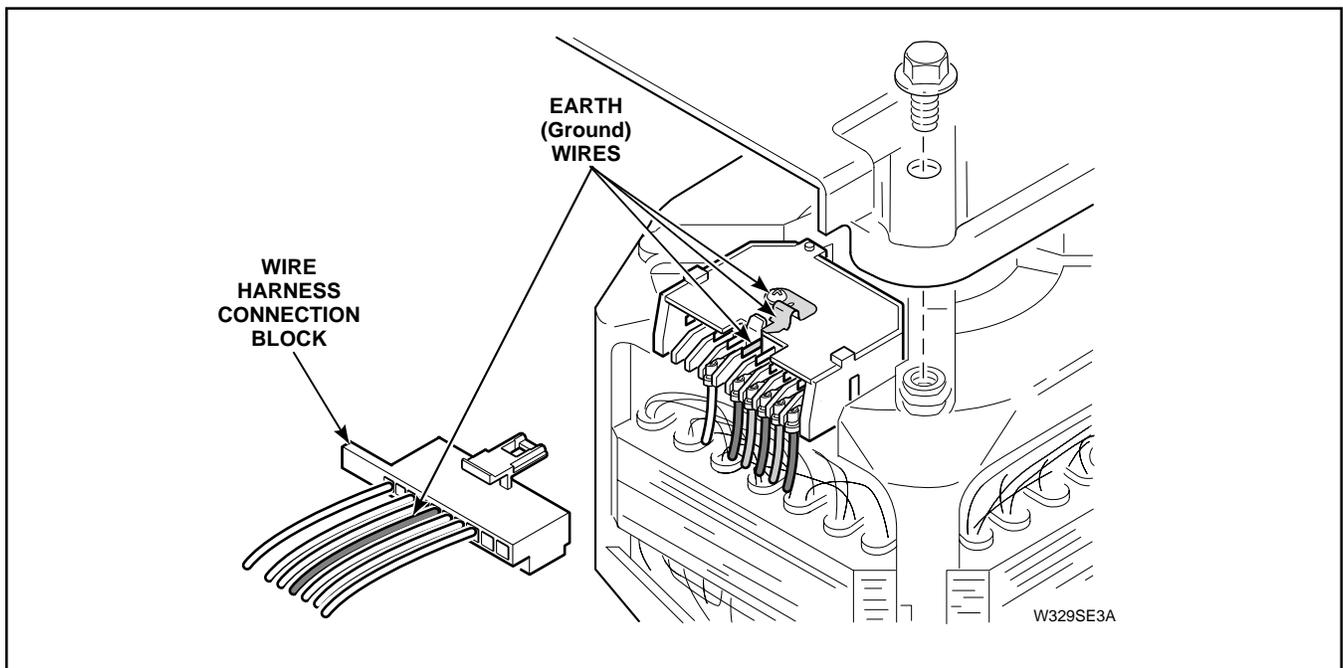


Figure 4

# SECTION II

## 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.

### 5. CONTROL PANEL ASSEMBLY

#### a. CONTROL PANEL:

1. Remove two control panel attaching screws and lay assembly forward on a protective pad on cabinet top, *Figure 5*.
2. Unplug wire harness quick disconnect blocks, two earth (ground) wires and leads from pressure switch and loading door switch, *Figure 6*.

**NOTE:** Refer to appropriate wiring diagram when reconnecting wire harnesses, earth (ground) and switch leads.

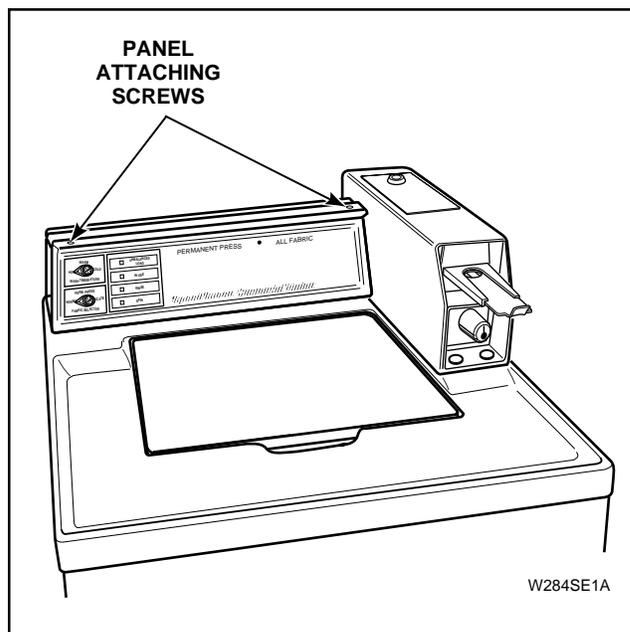


Figure 5

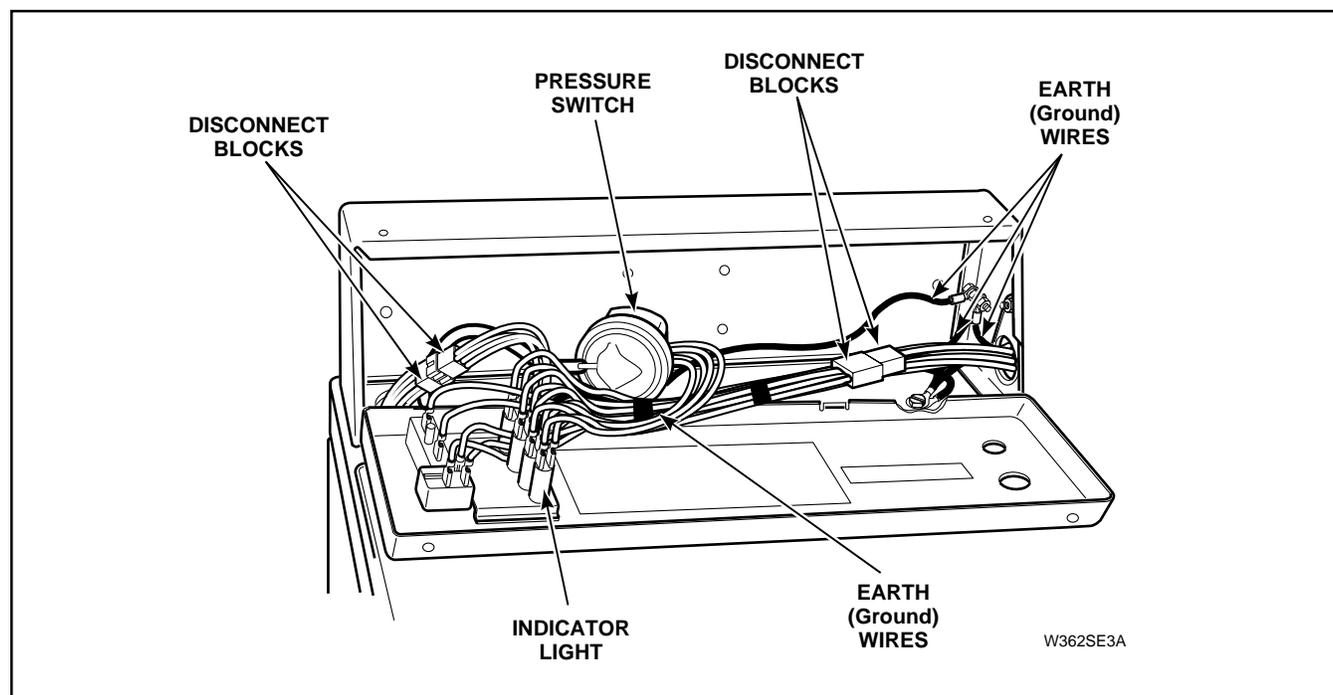


Figure 6

(continued)

## ▲ WARNING

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

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

W003

### b. CYCLE SELECTOR OR WASH TEMPERATURE SWITCH:

1. Remove two control panel attaching screws and lay assembly forward on protective pad on cabinet top.
2. Loosen setscrew holding switch knob to switch shaft, *Figure 7*.
3. Remove knurled nut holding switch to control panel, *Figure 7*.

**NOTE:** Lockwasher must be between switch and control panel when installing switch, *Figure 7*.

4. Disconnect wires from switch.

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

### c. INDICATOR LIGHTS — (Unbalanced Load In Use, Rinse or Spin, *Figure 6*):

1. Remove two control panel attaching screws and lay assembly forward on protective pad on cabinet top.
2. Disconnect wires from light.

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

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

### d. PRESSURE SWITCH (*Figure 6*)

1. Remove two control panel attaching screws and lay assembly forward on protective pad on cabinet top.
2. Remove two screws holding switch to cabinet top.
3. Pull switch out of control hood far enough to disconnect pressure hose and wires from switch.

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

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

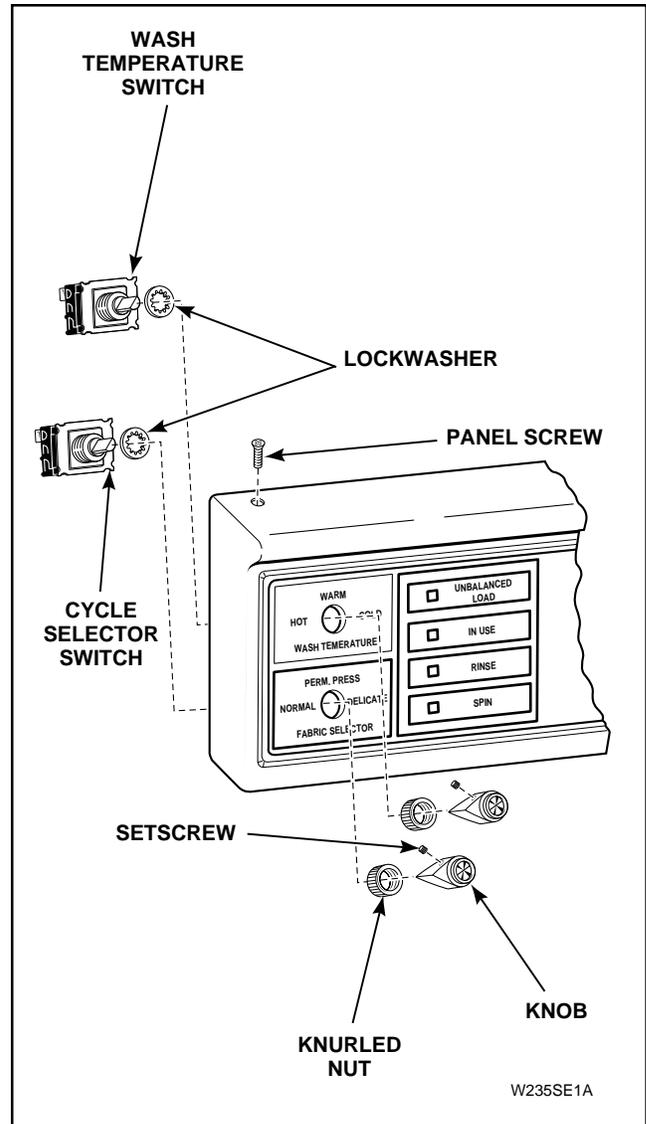


Figure 7

## **▲ 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

### **e. CONTROL PANEL OVERLAY (Removal):**

1. Remove control panel attaching screws and lay assembly forward on protective pad on cabinet top.
2. Loosen setscrews holding switch knobs to switch shafts, *Figure 7*.
3. Remove knurled nuts holding switches to control panel, *Figure 7*.

**NOTE: Lockwashers must be between switches and control panel when installing switches, *Figure 7*.**

4. Disconnect wires from switches and indicator lights.

**NOTE: Refer to appropriate wiring diagram when rewiring switches and indicator lights.**

5. Remove control panel overlay by peeling it from control panel frame.

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

### **f. CONTROL PANEL OVERLAY (Installation):**

**NOTE: Before removing protective backing from new overlay, check fit of overlay to control panel frame. Switch holes are the locating guides.**

1. Once panel overlay is fitted to the front of control panel frame, carefully peel protective backing from the left end of panel overlay and press into place.
2. Remove rest of protective backing from panel overlay and firmly press overlay into place on control panel frame.

## ▲ 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

## 6. TIMER ASSEMBLY

### a. TIMER REMOVAL (Metered Models):

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

1. Unlock and remove meter case service door.
2. Remove timer bracket cap screw, *Figure 8*.
3. Slide timer bracket left to disengage bracket from shoulder screw. Lift timer and bracket up and out of meter case through service door opening as far as wires will permit.

**NOTE:** If only replacing clutch, proceed to step 7.

4. Disengage wire harness terminal block plug from timer by pressing in movable locking tabs (located on each side of terminal block plug), *Figure 9*. Then pull terminal block plug away from timer.
5. Disconnect earth (ground) wire from terminal on timer, *Figure 9*.

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

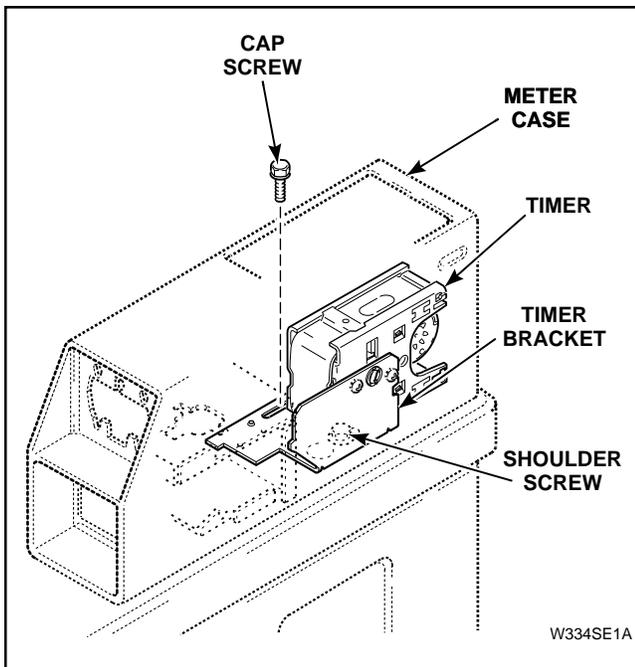


Figure 8

**IMPORTANT:** Be careful not to dislodge or damage two timer motor lead wires while handling timer.

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

6. Remove two screws holding timer to timer bracket, *Figure 9*.
7. Loosen setscrew holding clutch to timer shaft, *Figure 10*.

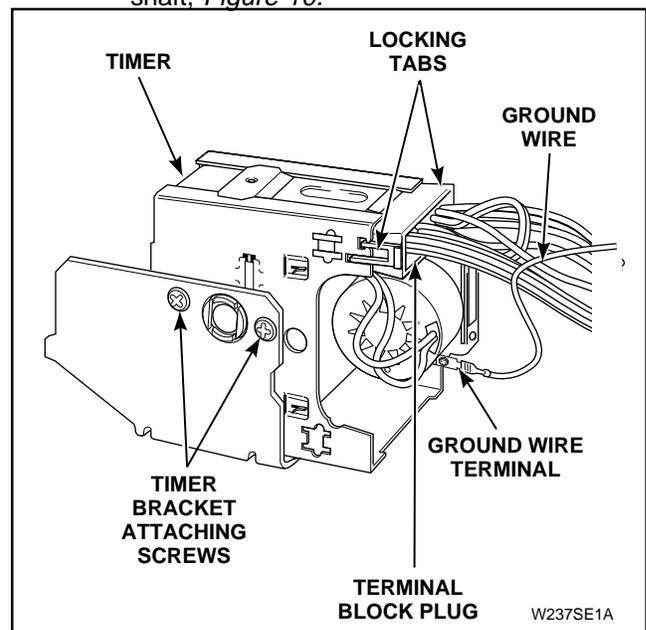


Figure 9

## ▲ WARNING

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

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

W003

### b. TIMER INSTALLATION (Metered Models):

1. Place clutch on timer shaft and tighten setscrew, *Figure 10*.

**NOTE:** When installing clutch, make sure clutch moves freely after setscrew is tightened.

2. Attach timer to timer bracket using two screws, *Figure 9*.
3. Reconnect wire harness terminal block plug and earth (ground) wire to timer.
4. Carefully place timer and timer bracket down inside meter case so keyhole slot in bracket fits over the head of shoulder screw, *Figure 8*.
5. After positioning timer bracket over shoulder screw, slide timer and bracket forward until bottom front of bracket contacts rear of coin vault in meter case, *Figure 8*.
6. While holding timer bracket up against rear of coin vault, install cap screw and tighten firmly, *Figure 8*.
7. Make sure wire harness is routed along bottom of meter case so it will not interfere with any moving parts in meter case.

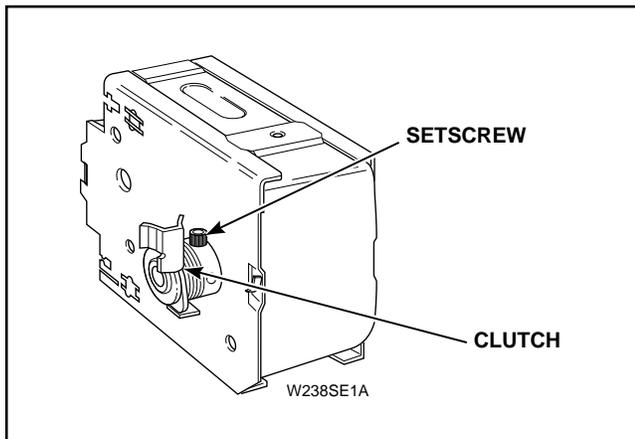


Figure 10

### c. TIMER REMOVAL (Nonmetered Models):

1. Loosen two setscrews holding timer knob to timer shaft, *Figure 11*.
2. Remove four screws and lockwashers holding timer and plate to timer case, *Figure 11*.

**NOTE:** When reinstalling timer and plate, lockwashers must be between heads of screws and timer plate.

3. Pull timer and plate out of timer case as far as wires will permit.

**NOTE:** Disconnect earth (ground) wire from earth (ground) terminal on timer.

4. Pull wire harness and blocks through into timer case; then disconnect timer harness from control hood harness at quick disconnect block.
5. Remove two screws holding timer to timer plate, *Figure 11*.
6. Disconnect wires from timer.

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

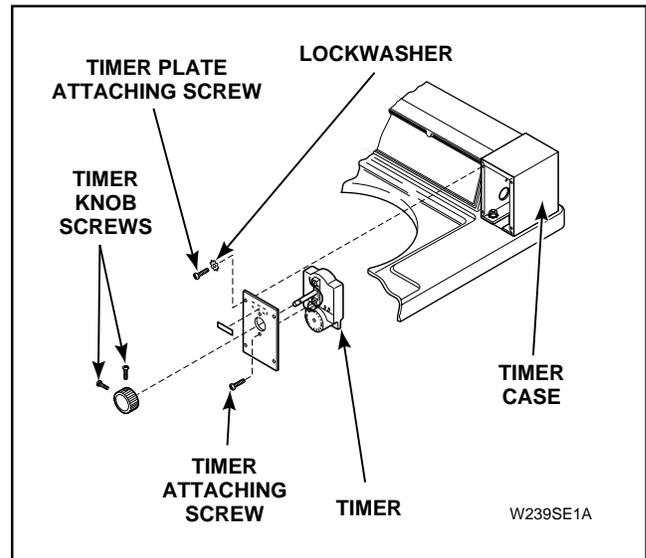


Figure 11

## ▲ WARNING

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

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

W003

## 7. METER OR TIMER CASE ASSEMBLY

### a. METER CASE REMOVAL (Metered Models):

1. Remove two control panel attaching screws, *Figure 5*, and lay assembly forward on protective pad on cabinet top.
2. Disconnect timer harness from control hood harness at disconnect blocks, *Figure 6*.
3. Remove timer assembly, paragraph 6.
4. Remove cap screw, lockwashers and nut holding meter case to end of control hood.
5. Remove coin drawer.
6. Remove shoulder screw from inside meter case.

**NOTE:** When installing meter case, shoulder screw must be installed in outer hole, *Figure 8*, to enable timer bracket to slide under screw head.

7. Remove front panel, paragraph 10.
8. Remove carriage bolts and locknuts holding meter case to cabinet top.
9. Carefully remove meter case and gasket from cabinet top.

### b. TIMER CASE REMOVAL (Nonmetered Models):

1. Remove timer from timer case, paragraph 6, step c.
2. Remove two control panel attaching screws and lay assembly forward on a protective pad on cabinet top, *Figure 5*.
3. Remove cap screw, lockwashers and nut holding timer case to control hood, *Figure 12*.
4. Remove front panel assembly, paragraph 10.
5. Remove two cabinet top hold down screws, *Figure 16*.
6. Tape loading door closed and lift cabinet top to a vertical position.
7. Remove carriage bolts, vinyl washers, lockwashers, and nuts holding timer case to cabinet top.
8. Support timer case and remove screw and fiber washer holding rear of case to cabinet top.

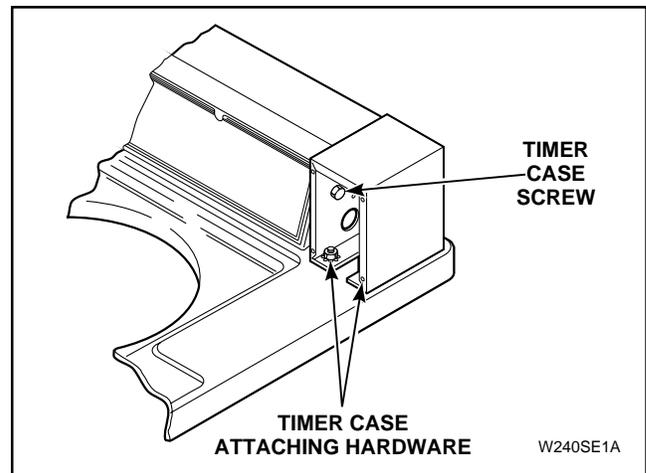


Figure 12

## ▲ 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.

W003

### 8. DRAIN HOSE ELBOW

- Loosen hose clamp and remove drain hose from elbow, *Figure 13*.
- Remove screws holding elbow to rear of washer cabinet, *Figure 13*.
- Pull elbow out through opening in cabinet far enough to loosen inner clamp, then remove elbow from inner hose.

**NOTE:** When installing elbow on inner hose, DO NOT allow hose inside of washer to twist! Direct elbow toward drain receptacle and secure elbow to washer cabinet.

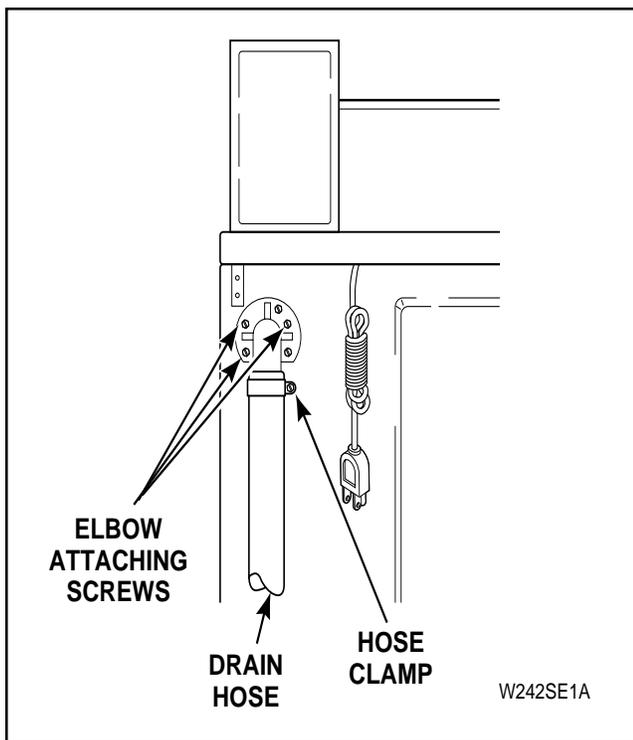


Figure 13

### 9. LOADING DOOR

- Open loading door, *Figure 14*.
- Remove two screws holding left hinge to door and remove gasket (if present) and hinge, *Figure 14*.
- With loading door raised to vertical position, swing left side of door toward front of washer, *Figure 15, procedure one*.
- Rotate loading door so door is upside down, *Figure 15, procedure two*.
- Remove loading door, right door hinge and bushing from cabinet top, *Figure 15, procedure three*.

**NOTE:** Reverse procedures when installing loading door.

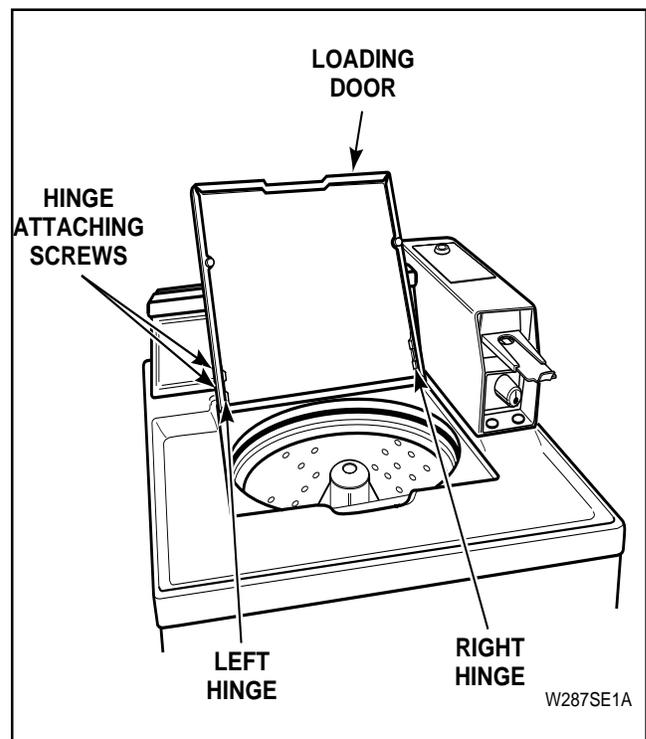
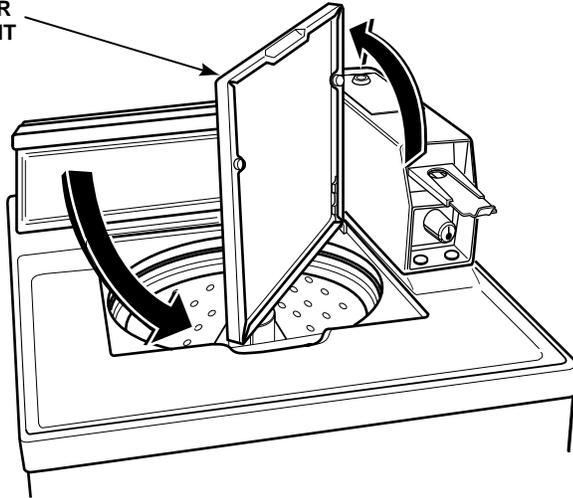


Figure 14

**Procedure One**

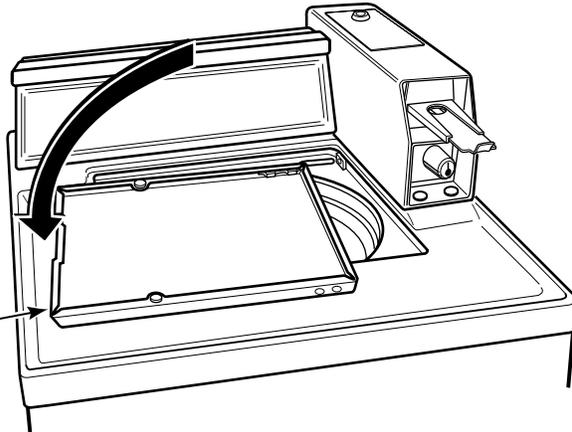
DOOR  
FRONT



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**Procedure Two**

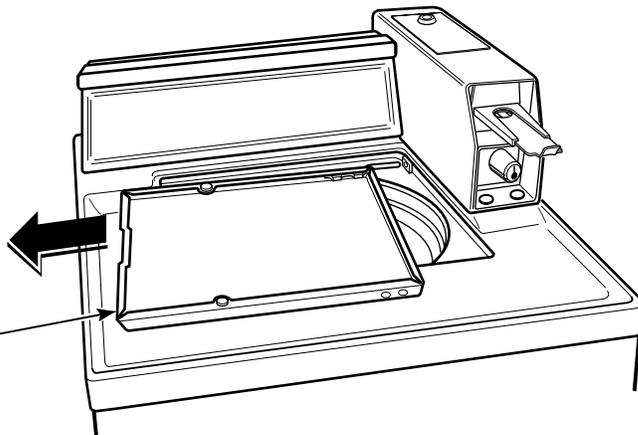
DOOR  
FRONT



W289SE3A

**Procedure Three**

DOOR  
FRONT



W290SE3A

Figure 15

## ▲ WARNING

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

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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

### 10. FRONT PANEL (Figure 16)

- Remove two screws from bottom edge of front panel.
- 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.

#### Brace

Remove screws holding brace to side flanges of front panel. Remove brace from front panel by swinging one end toward bottom of front panel and remove brace.

### 11. MOTOR AND MOUNTING BRACKET

- Remove two screws from bottom edge of front panel, Figure 16.
- Pull bottom of panel away from washer until hold-down clips (located on top flange of panel) disengage from slots in cabinet top.
- Loosen hose clamps and remove hoses from pump assembly, Figure 17.
- Unhook idler spring from clip on front of motor mounting bracket, Figure 17.

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

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

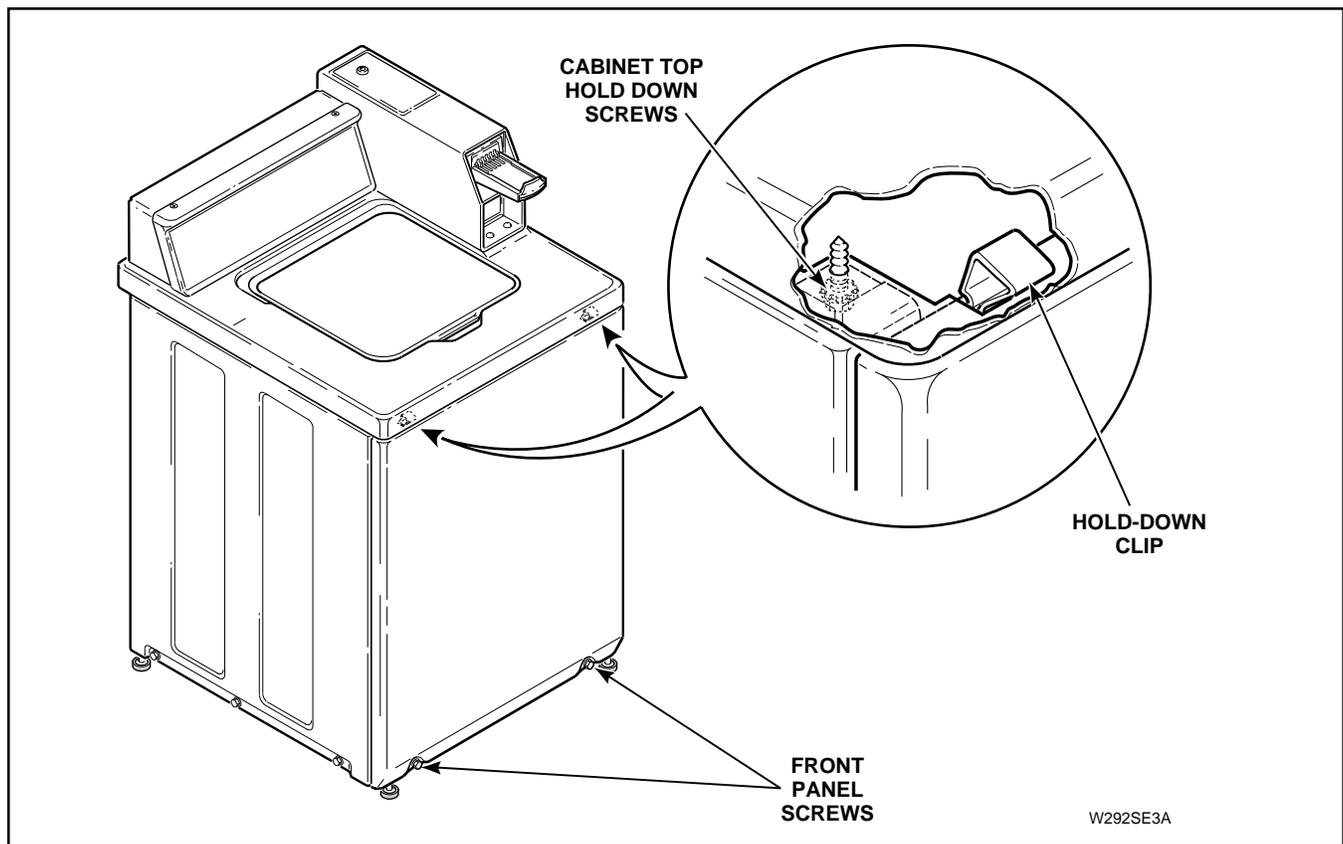


Figure 16

## ▲ WARNING

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

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- Never start the washer with any guards/panels removed.
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W003

- Reach in and around right side of motor and run belt off right side of large drive pulley, *Figure 17*.
- Disconnect wire harness from motor switch by pressing down on locking tab on top of connection block and at the same time pull connection block away from motor switch, *Figure 18*.
- Remove four screws holding motor and mounting bracket to washer base, *Figure 18*, then lift complete assembly out of washer.

**IMPORTANT:** Carefully lay motor on its side. Observe belt configuration around rear pump leg. Belt **MUST** encircle rear pump leg when reassembling, *Figure 19*.

### PUMP AND BELT REMOVAL

- Remove three screws holding pump assembly to motor, *Figure 19*.

### REASSEMBLY OF PUMP AND BELT

**IMPORTANT:** Install pump and belt together. Drive belt **MUST** be replaced with belt No. 35517 (50 Hertz) (special clutch-type belt) for proper washer operation.

- Clean any corrosion or foreign material from motor shaft that will be contacting the double "D" slot in pump impeller.
- Apply a thin film of No. 03637P Lubricant to end and sides of motor shaft. This lubricant helps keep moisture out of the hub area and retards corrosion.
- Align pump impeller hub with motor shaft. Make sure belt encircles rear pump leg, carefully push pump onto motor shaft so three pump legs bottom out in the embosses on motor housing before screws are tightened, *Figure 19*.
- Tighten three screws to 35 inch-pounds (4.0N-m) (maximum). **DO NOT** overtighten screws!
- Reinstall motor and pump assembly into washer.

**IMPORTANT:** After installing motor and pump assembly in washer and all hoses have been reconnected, add at least a quart of water to washtub to lubricate pump seals. Running a pump without water will ruin its seals.

### MOTOR REMOVAL

Remove nuts, steel washers, spacers and rubber mounts holding motor to mounting bracket, *Figure 20*. 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 20* for motor and mounting bracket assembly sequence.

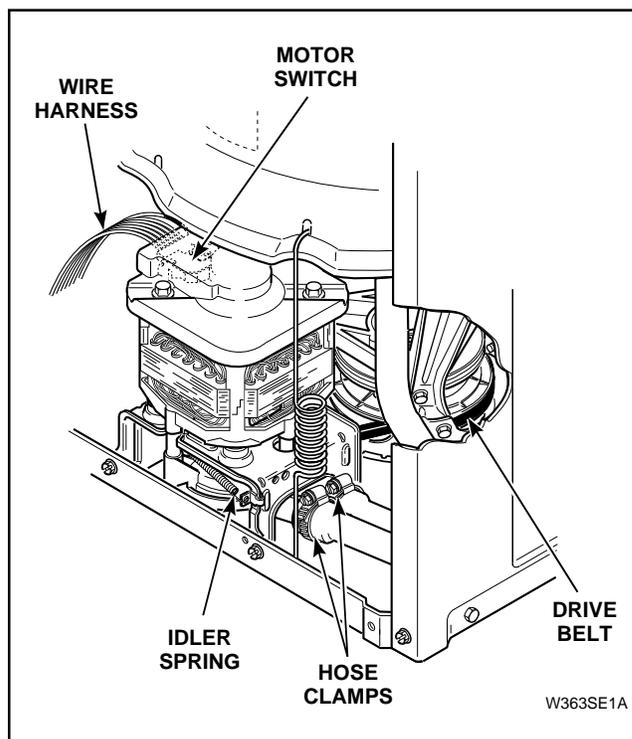


Figure 17

## ▲ WARNING

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

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

W003

## 12. IDLER LEVER AND PULLEY

- Remove two screws from bottom edge of front panel, *Figure 16*.
- Pull bottom of panel away from washer until hold-down clips (located on top flange of panel) disengage from slots in cabinet top.

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

- Loosen hose clamps and remove hoses from pump assembly, *Figure 17*.
- Unhook idler spring from idler lever, *Figure 20*.

**IMPORTANT:** Use care when removing idler spring. If idler spring is overstretched, washer operation will be affected.

- Reach in and around right side of motor and run belt off right side of large drive pulley, *Figure 17*.
- Disconnect wire harness from motor switch by pressing down on locking tab on top of connection block and at the same time pull connection block away from motor switch, *Figure 18*.
- Remove four screws holding motor assembly to washer base, *Figure 18*, then lift complete assembly out of washer.
- Remove nut, washer and bolt holding idler lever and pulley to motor mounting bracket,

**NOTE:** Refer to *Figure 20* for idler lever and pulley assembly sequence.

- Apply a light film of No. 03637P Lubricant to area of idler lever that makes contact with motor mounting bracket.

**IMPORTANT: DO NOT OVER LUBRICATE!** Excess lubricant can be thrown into pivot dome area during normal washer operation. Any lubricant on pivot dome or snubber pad and isolator assembly will cause premature tripping of the out-of-balance switch. This condition will persist until lubricant is removed.

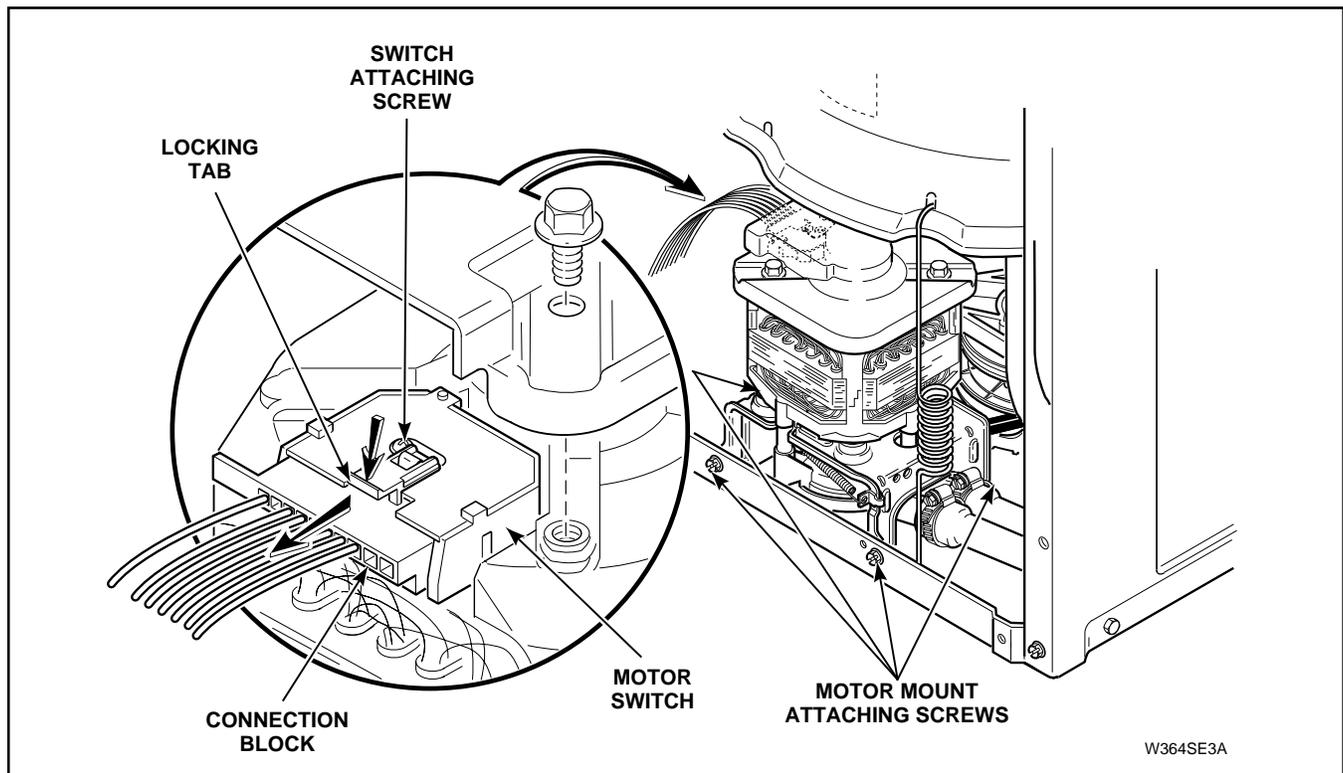


Figure 18

## **▲ WARNING**

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

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

W003

### **13. MOTOR DRIVE PULLEY**

- a. Remove two screws from bottom edge of front panel, *Figure 16*.
- b. Pull bottom of panel away from washer until hold-down clips (located on top flange of panel) disengage from slots in cabinet top.

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

- c. Loosen hose clamps and remove hoses from pump assembly, *Figure 18*.
- d. Unhook idler spring from idler lever, *Figure 20*.

**IMPORTANT: Use care when removing idler spring. If idler spring is overstretched, washer operation will be affected.**

- e. Reach in and around right side of motor and run belt off right side of large drive pulley, *Figure 17*.
- f. Disconnect wire harness from motor switch by pressing down on locking tab on top of connection block and at the same time pull connection block away from motor switch, *Figure 18*.
- g. Remove four screws holding motor assembly to washer base, *Figure 18*, then lift complete assembly out of washer.
- h. Lay motor assembly on its side.

**NOTE: To remove pulley, support motor shaft (to prevent bending shaft) and drive out pulley roll pin, *Figure 20*.**

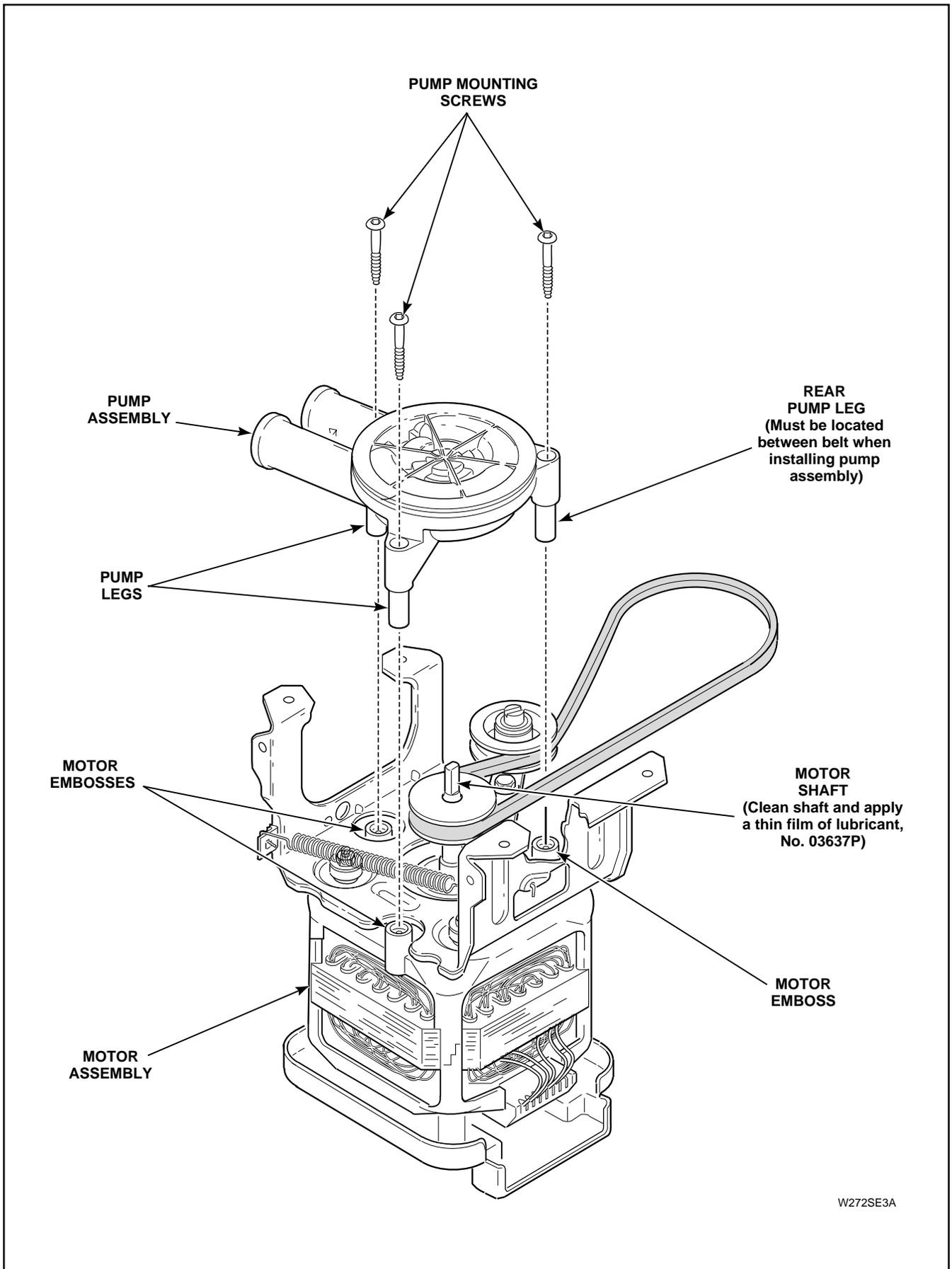
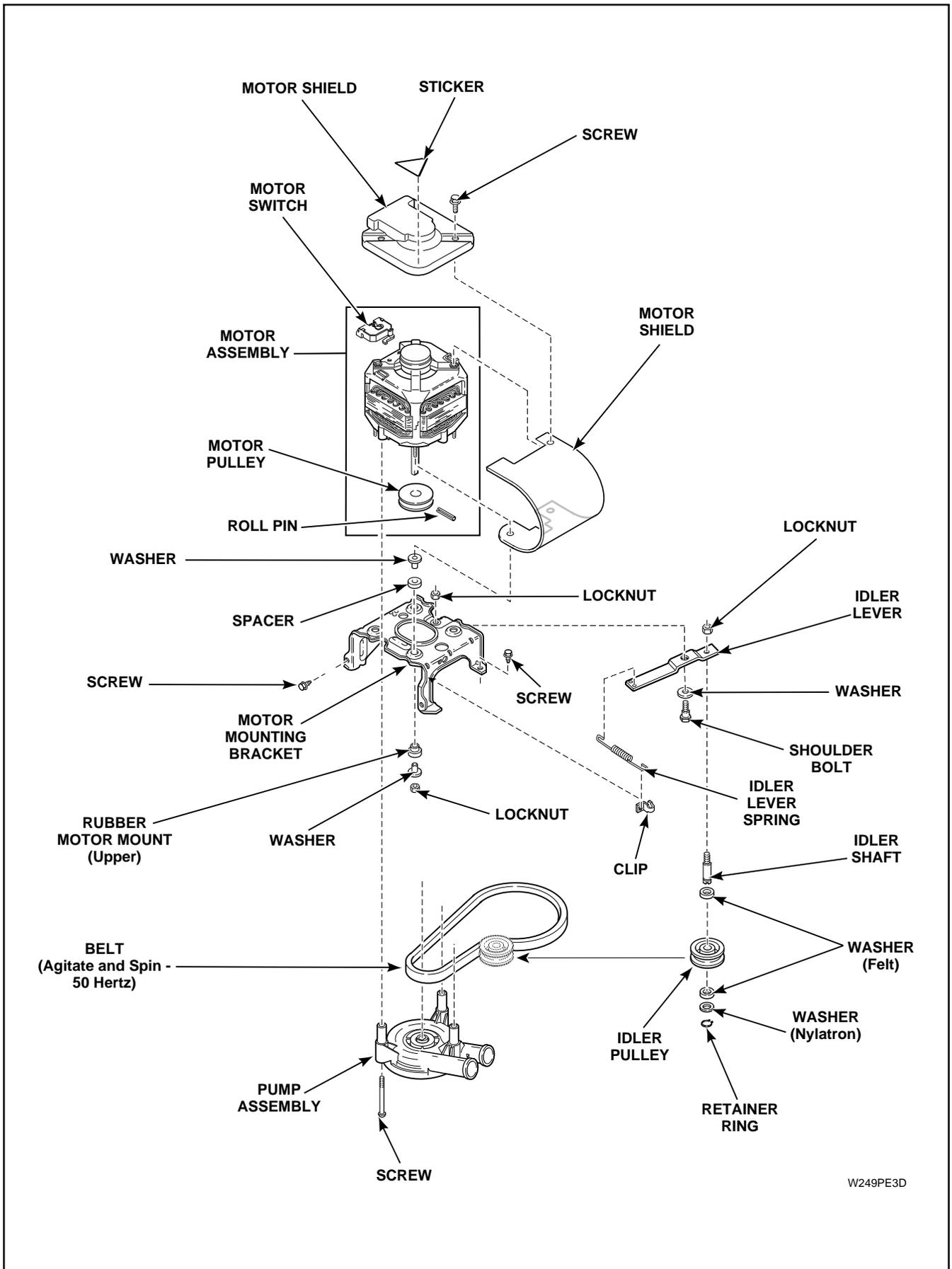


Figure 19



W249PE3D

Figure 20

## **▲ WARNING**

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

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

W003

### **14. MOTOR SWITCH**

- a. Remove two screws from bottom edge of front panel, *Figure 16*.
- b. Pull bottom of panel away from washer until hold-down clips (located on top flange of panel) disengage from slots in cabinet top.
- c. Remove two screws holding motor shield to motor, *Figure 20*, and remove shield.
- d. Disconnect wire harness from motor switch by pressing down on locking tab on top of connection block and at the same time pull connection block away from motor switch, *Figure 18*.

- e. Remove screw holding motor switch to motor, *Figure 18*, and remove switch.
- f. Disconnect internal motor leads from motor switch terminals.

**NOTE: Refer to Wiring Schematics, SECTION VI for rewiring internal switch wires.**

**IMPORTANT: To avoid an open circuit, DO NOT pull on terminal block wires when removing block from motor switch as this could damage wires or connection crimpings. Before attaching wire harness connection block to motor switch, make sure all male terminals on motor switch are straight and are capable of accepting terminals from wire harness connection block.**

## ▲ 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

### 15. AGITATOR

- Open loading door.
- Remove agitator by placing two agitator hooks, No. 254P4P, under bottom edge of agitator, *Figure 21*.

**IMPORTANT:** Hooks should be positioned 180 degrees apart and must be placed under agitator vane for greater stability. If hooks are placed between vanes, damage to agitator may occur.

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

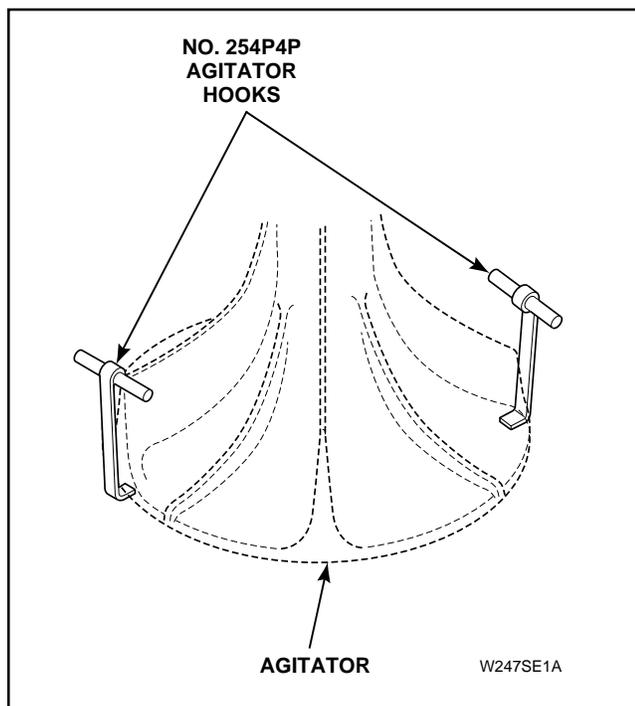


Figure 21

### 16. CABINET TOP ASSEMBLY

- Remove front panel, paragraph 10.

#### b. METERED MODELS:

- Remove timer assembly, paragraph 6, step a.
- Remove shoulder screw and cap screw from inside meter case.
- Remove two cabinet top hold down screws.
- Remove security bolt (if present) from left rear corner of cabinet top.

**NOTE:** When lowering cabinet top into position or reinstalling cabinet top, pivot outer tub forward far enough to prevent damaging (bending) out-of-balance switch lever.

- Tape loading door closed and lift cabinet top to a vertical position by hinging it on the rear hold-down brackets.

**NOTE:** Cabinet top is self supporting, however, a small chain may be used for additional support, *Figure 22*.

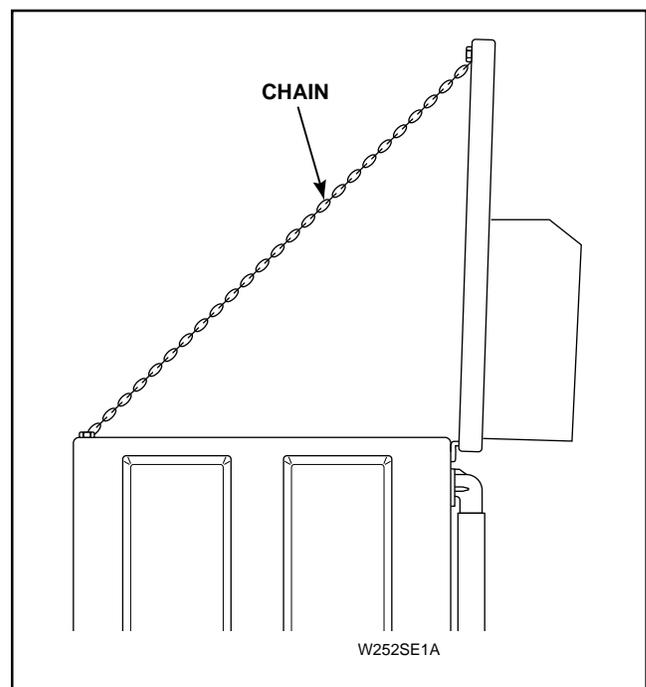


Figure 22

## ▲ WARNING

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

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

W003

## 17. CABINET TOP ASSEMBLY REMOVAL

- a. Open control panel assembly, paragraph 5.
- b. Disconnect pressure hose from pressure switch.

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

- c. Push base wire harness block and pressure hose down through hole in cabinet top.
- d. Tape loading door closed.
- e. Open cabinet top assembly, paragraph 16.
- f. Lift front of cabinet top slightly and pull forward to disengage from rear hold-down

brackets.

- g. Pull top forward far enough to permit disconnecting earth (ground) wires from top rear corner gusset of washer cabinet, *Figure 33*, disconnect wires from mixing valve solenoids at rear of washer.

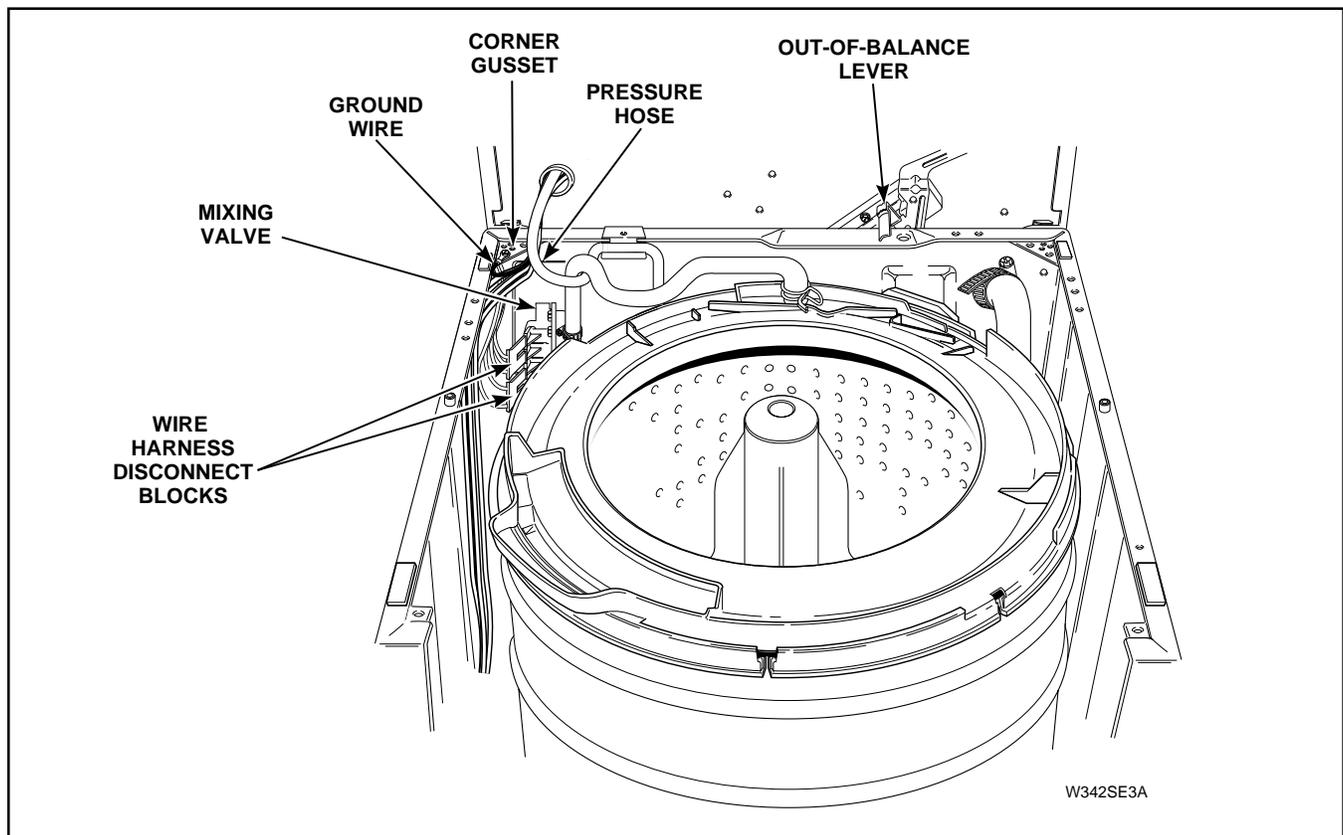
**NOTE:** Refer to appropriate wiring diagram when rewiring mixing valve solenoids.

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

## ▲ WARNING

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

**IMPORTANT:** When reinstalling cabinet top and before lowering top into position, pivot outer tub forward far enough to prevent damaging (bending) out-of-balance switch lever, *Figure 23*.



W342SE3A

Figure 23

**▲ WARNING**

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

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

W003

**18. AGITATOR DRIVE BELL AND SEAL KIT, NO. 36443P**

**IMPORTANT:** If water is present in washtub, spin and pump out before attempting to remove drive bell and seal assembly.

- Remove agitator, paragraph 15.
- Remove plug, screw and "O" ring washer from top of drive bell.

**NOTE:** Use No. 294P4 Drive Bell Tool to remove drive bell from transmission shaft.

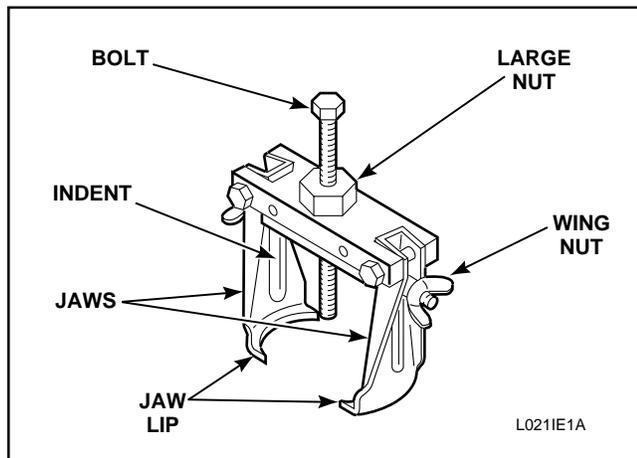


Figure 24

**NOTE:** Drive Bell Tool, No. 253P4, must be updated with jaws, No. 294P4A, and Bolt, No. 294P4B, to remove the 36443P Drive Bell Kit.

- Back bolt out of 294P4 Drive Bell Tool approximately one third of the way, *Figure 24*.

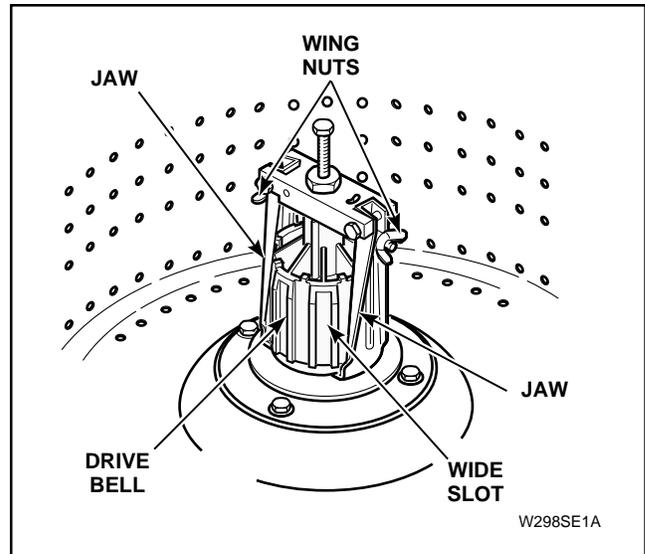


Figure 25

- Place tool over drive bell, making sure indent on jaws line up with side slots on drive bell, *Figure 25*.
- Thread bolt down through hole in top of drive bell until it bottoms out.
- Place lip of each jaw under bottom edge of drive bell, making sure indent on jaws line up with wide slots on drive bell. Tighten wing nuts on tool to hold jaws firmly against drive bell, *Figure 25*.
- Using an adjustable wrench, turn large nut on tool **COUNTERCLOCKWISE** to pull drive bell from transmission output shaft, *Figure 26*.

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

## ▲ 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

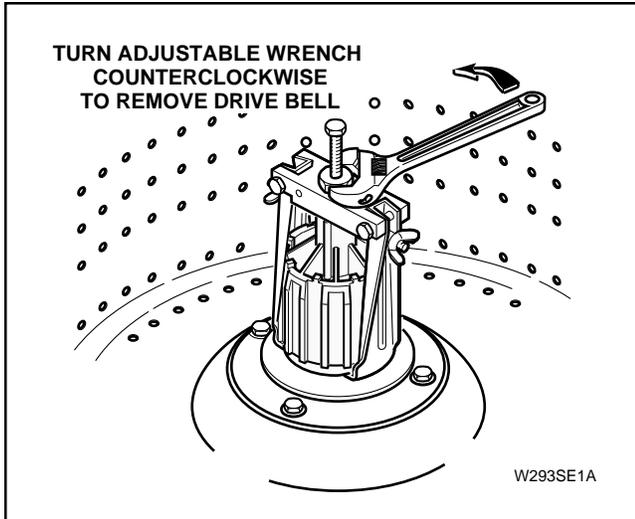


Figure 26

- h. After drive bell has been pulled, remove tool and drive bell by turning quarter inch bolt out of transmission output shaft.
- i. Loosen wing nuts and remove drive bell from tool.
- j. Remove old seal from hub assembly by:
  1. Placing a flat bladed screwdriver between bottom edge of seal and hub.
  2. Using washtub bolts as a pry area, pop off lower seal bead.
  3. Grasping bottom of seal, pull straight up freeing upper seal bead.

- k. Thoroughly clean all foreign material from seal mounting area of hub assembly, bronze bearing and washer, *Figure 27*.
- l. Lubricate new seal with liquid soap or soapy water to aid in assembly of seal onto hub, *Figure 28*.
- m. Apply a small amount of supplied grease, No. 36765P, to inside sealing lips of seal, *Figure 28*.

**IMPORTANT: DO NOT allow any lubricants to come in contact with outside surface of seal.**

- n. Apply remainder of supplied grease, Part No. 36765P, to exposed surface of washer between transmission output shaft and seal.

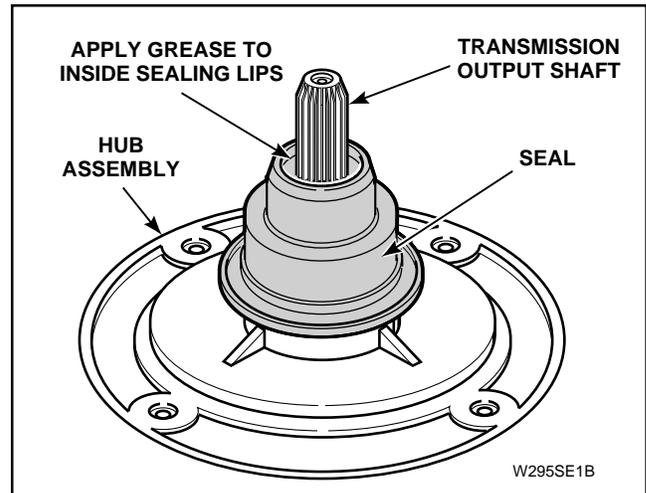


Figure 28

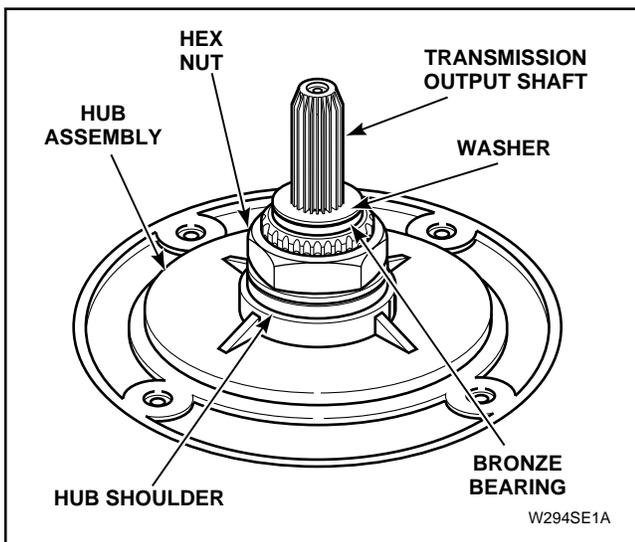


Figure 27

## ▲ WARNING

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

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

W003

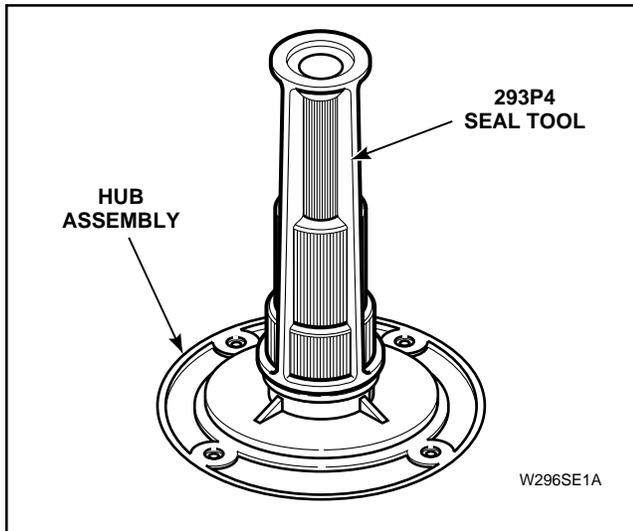


Figure 29

- o. Place new drive bell seal onto hub and carefully push into position using large end of No. 293P4 Seal Tool, *Figure 29*.

**IMPORTANT:** Using a small pocket mirror, check entire circumference of bottom seal flange to make sure seal is pressed down against shoulder on hub; there should be no gap!

- p. Turn the No. 293P4 Seal Tool upside-down and place the small end over transmission output shaft and onto the seal, *Figure 30*.

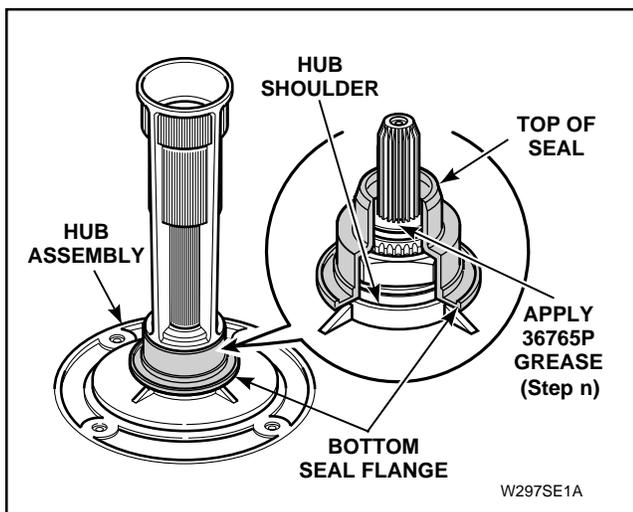


Figure 30

- q. Push down on tool with a quick motion until it bottoms out and the top of seal is fully seated, *Figure 30*.

### INSTALLING DRIVE BELL:

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

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

- c. Using an adjustable wrench, turn large nut on tool **CLOCKWISE** to force drive bell down onto transmission shaft until drive bell bottoms out on shaft.
- d. Turn quarter inch bolt out of transmission shaft and remove tool.
- e. Place new "O" ring onto new shoulder screw. Thread shoulder screw down through hole in top of drive bell and into transmission shaft.

**NOTE:** Tighten new shoulder screw to approximately 60 to 80 inch-pounds (6.86 to 9.15 N-m).

- f. Place new plug over hole in drive bell and firmly press into place using palm of your hand.

**NOTE:** It may be necessary to insert the end of a paper clip along side of plug as it is pressed into drive bell to release entrapped air.

**IMPORTANT:** When fully seated plug should not extend above drive bell more than 1/8" (3.2 mm).

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

## ▲ 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

### 19. OUT-OF-BALANCE SWITCH ASSEMBLY

- Open control panel assembly, paragraph 5.
- Move switch lever off switch plunger, *Figure 32*, by moving lever back under cabinet top.
- Place a thin piece of metal or paper in front of switch to keep screws from falling through holes in switch holder.
- Use an open-end wrench, remove screws holding switch to switch holder, *Figure 31*.
- Remove switch and screws from switch holder.
- Insert screws into holes in new switch.
- Place a thin piece of metal or paper in front of switch to keep screws from falling through holes in switch holder.
- Place switch assembly into switch holder, *Figure 31*.
- Tighten screws using an open-end wrench and torque to 10 inch-pounds (1.14 N-m).

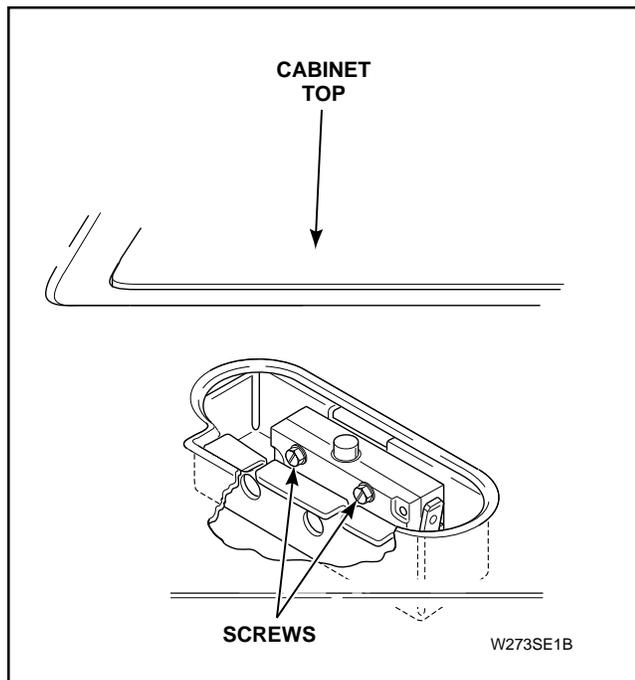


Figure 31

**NOTE:** Make sure switch is secure within holder by wiggling it back and forth.

- Reset switch lever by raising and lowering loading door.

**NOTE:** Make sure switch lever tab locates itself on top of switch plunger.

- Reconnect wires to switch terminals.

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

- Reinstall control panel assembly on control hood.

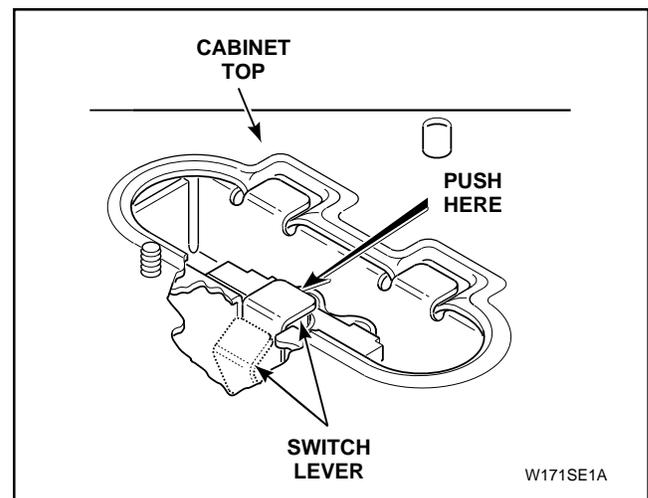


Figure 32

## ▲ WARNING

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

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

W003

## 20. MIXING VALVE ASSEMBLY

- a. Raise cabinet top assembly, paragraph 16.
- b. Remove two screws holding mixing valve to mounting bracket at rear of washer cabinet, *Figure 33*.

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

- c. Pull mixing valve out toward front of washer far enough to permit disconnecting water inlet and fill hoses from mixing valve, *Figure 33*.
- d. Remove wires and quick disconnect blocks from mixing valve solenoid terminals, *Figure 33*.

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

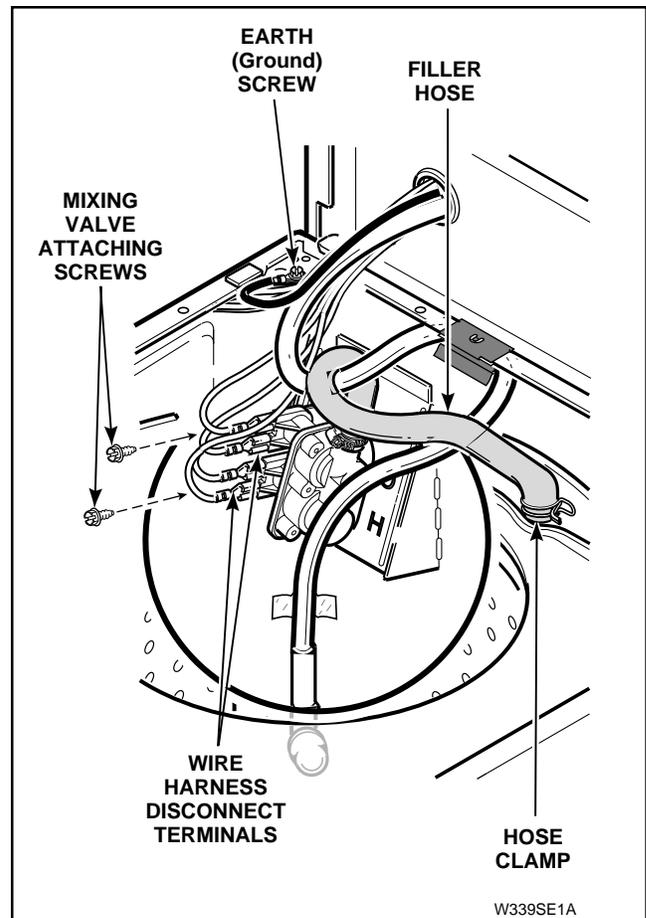


Figure 33

## ▲ WARNING

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

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

W003

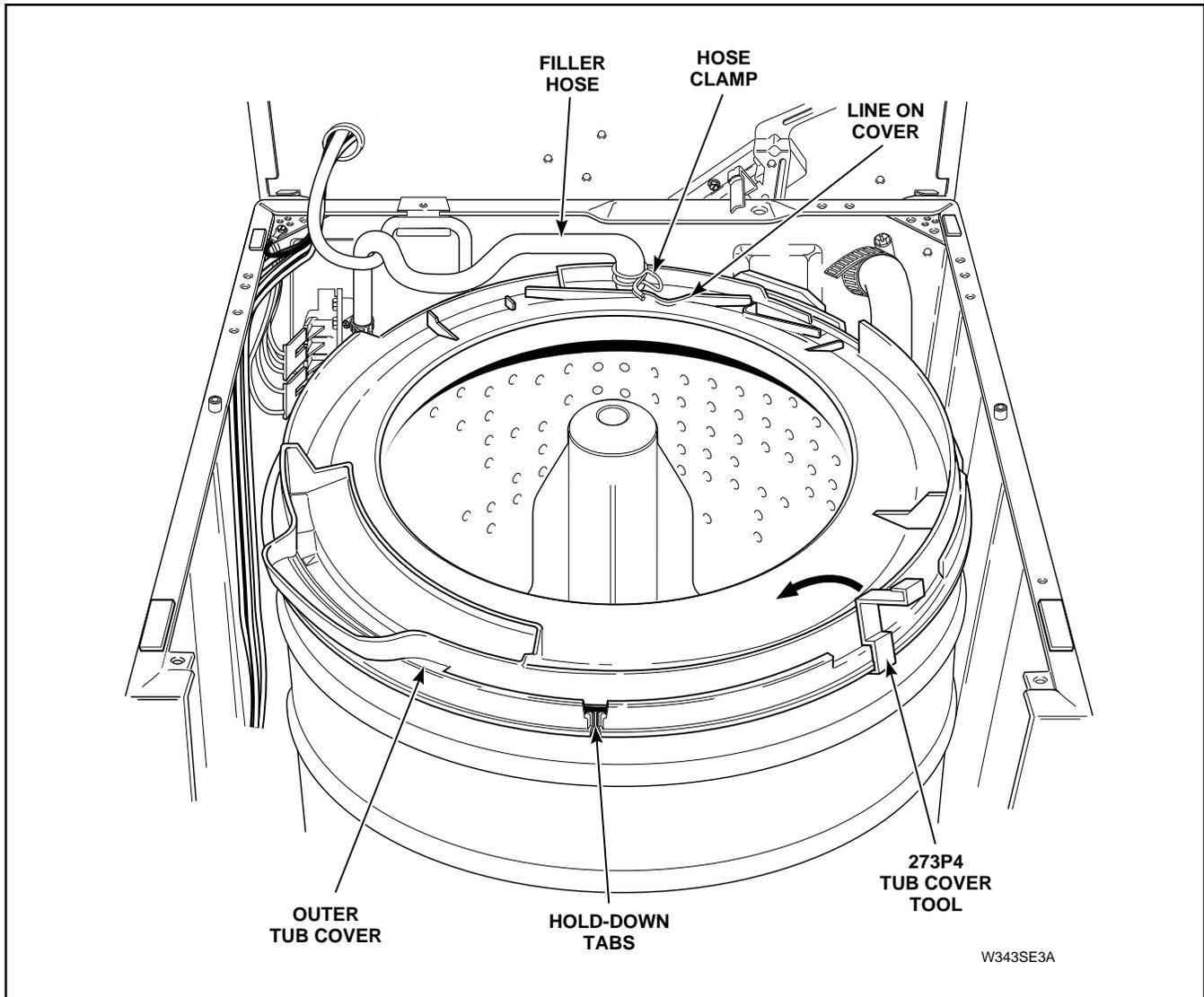


Figure 34

### 21. OUTER TUB COVER AND CLOTHES GUARD

- Remove agitator, paragraph 15.
- Raise cabinet top, paragraph 16.
- Loosen hose clamp and remove filler hose from outer tub cover, *Figure 34*.

**NOTE:** When installing filler hose, white line on hose must be aligned with line located on top side of outer tub cover, *Figure 34*.

- There are eight tub cover hold-down tabs which snap over the outer tub flange. Using special tub cover tool, Part No. 273P4, insert two prongs of tool underneath each side of tandem tabs, *Figure 34*. Tilt tool toward center of tub cover and at the same time lift upward on cover to unsnap hold-down tabs from outer tub flange. One by one, disengage each of the eight hold-down tabs from outer tub flange and remove cover.

**(continued)**

## ▲ WARNING

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

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

W003

**IMPORTANT:** When installing outer tub cover, always use a new cover gasket.

**NOTE:** Clean and remove any foreign material in gasket groove of outer tub cover and outer tub flange.

- e. Lay gasket into gasket groove of tub cover, *Figure 35*.
- f. Using your fingers, press gasket down into gasket groove of tub cover. Avoid pressing gasket past ends of hold-down tabs.

**IMPORTANT:** Care must be taken not to twist or bunch gasket in any one area to avoid leaks after assembly.

- g. Install gasket past ends of hold-down tabs to bottom of gasket groove using semi-curved end of tub cover tool Part No. 273P4.

**NOTE:** Tub cover tool Part No. 273P4 is designed to spread open hold-down tabs to prevent tearing of gasket during installation.

- h. With tub cover tilted at approximately a 45 degree angle, insert the positioning pin into notch on outer tub flange, *Figure 36*.
- i. Lower cover and push down firmly on top of hold down tabs until tabs snap over edge of outer tub flange.
- j. Cross over to opposite side of tub cover and push down firmly on top of hold down tabs until tabs snap over edge of outer tub flange. Continue with this criss-cross pattern, until tub cover is fully seated. Visually check each tab area again to ensure cover is seated.

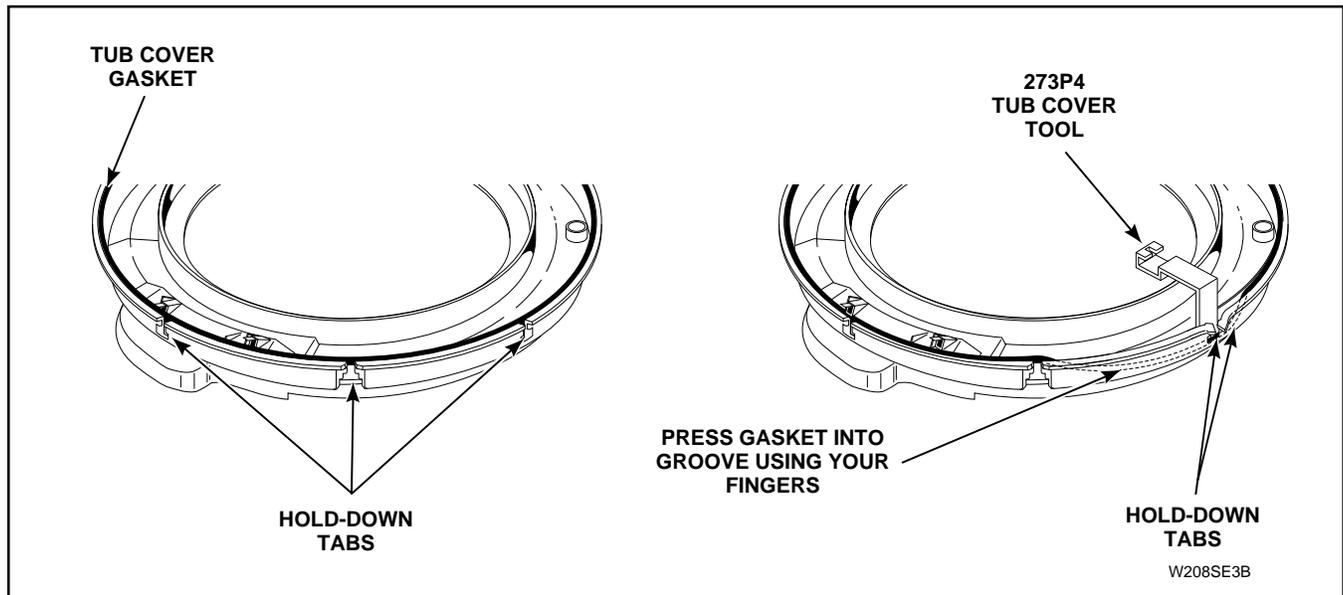


Figure 35

(continued on page 32)

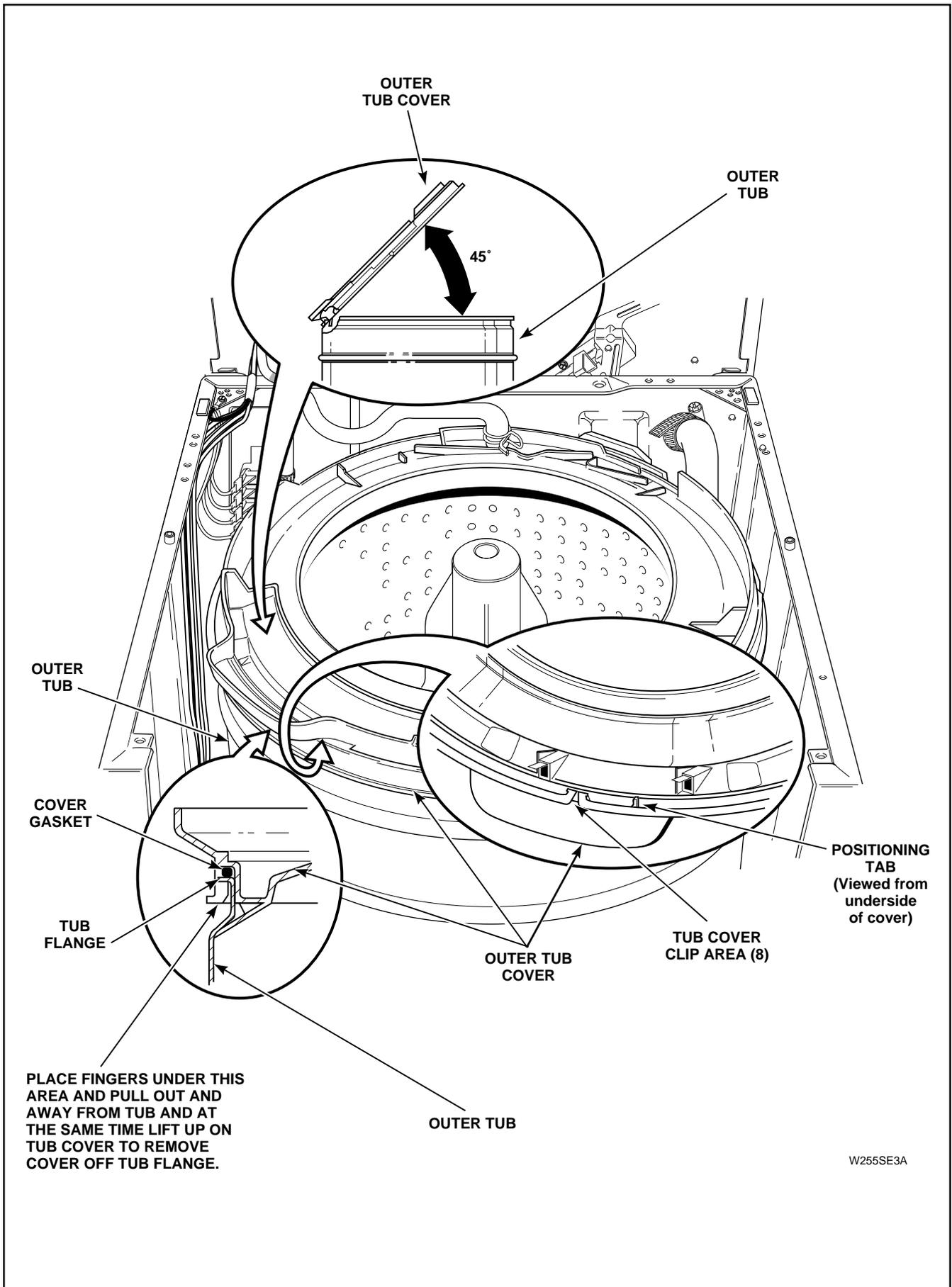


Figure 36

## ▲ WARNING

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

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

W003

- k. Remove four screws and washers holding washtub to hub, *Figure 37*.
- l. Lift washtub and clothes guard out of outer tub.

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

**NOTE:** When installing washtub, make sure all traces of old gasket are removed from bottom of washtub. When installing washtub, always use a new gasket between washtub and hub.

### m. CLOTHES GUARD REMOVAL:

1. Place blade of a small screwdriver into slots between clothes guard and washtub, *Figure 37*.
2. Carefully pry pins of clothes guard out of holes in washtub, *Figure 37*.

**NOTE:** As you are prying out pins, lift up on clothes guard.

3. Pry pins out of washtub holes approximately half way around tub before clothes guard can be removed.

### n. CLOTHES GUARD INSTALLATION:

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

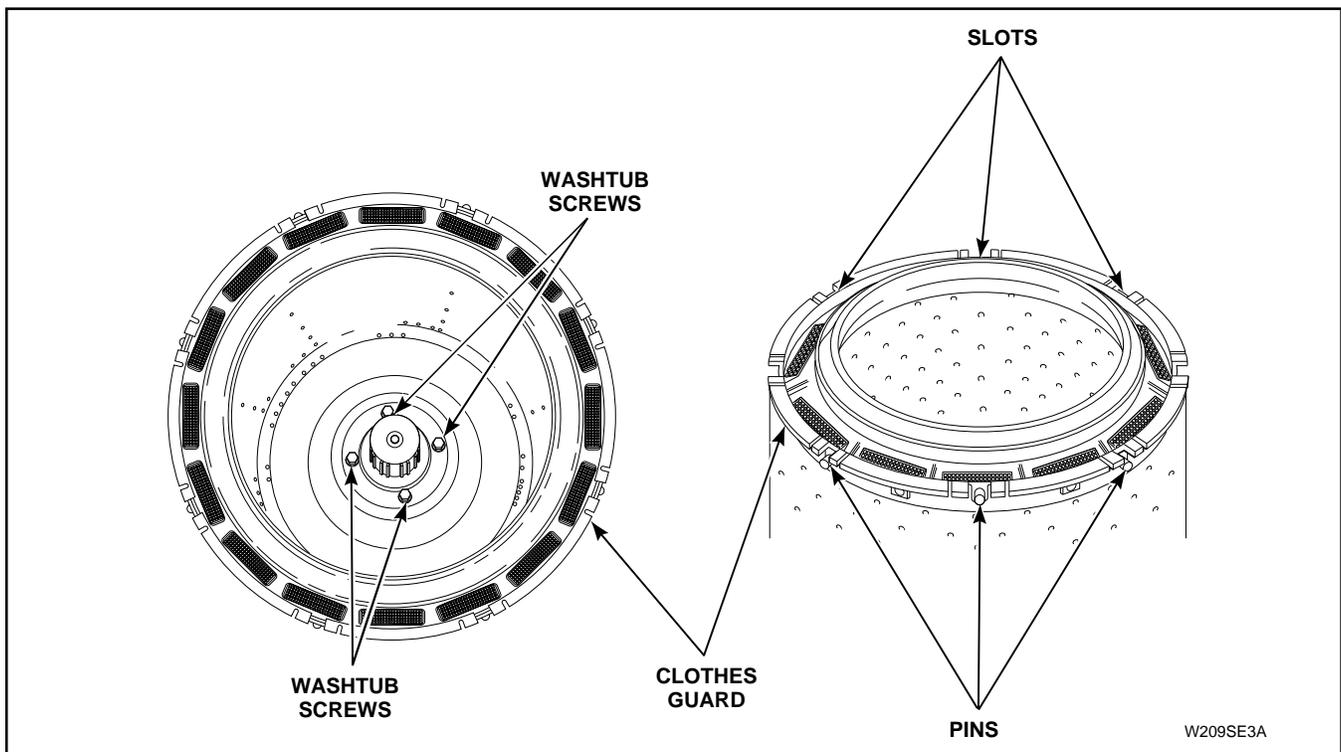


Figure 37

## ▲ WARNING

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

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

W003

## 22. HUB AND SEAL KIT, NO. 495P3A

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

- Remove front panel, paragraph 10.
- Remove drive bell and seal, paragraph 18.
- Remove outer tub cover and clothes guard, paragraph 21.
- Remove large hex nut, using No. 237P4 Hex Wrench.
- Remove and discard spline insert from transmission tube.

**IMPORTANT:** Use the new spline insert (supplied in kit) when reinstalling large hex nut. DO NOT reuse an old spline insert because the large hex nut may loosen during washer operation.

- Remove hub assembly from splines on transmission tube.

**NOTE:** A gear puller may be necessary to remove hub assembly.

- Remove water seal from outer tub.

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

- 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 assembly down against outer tub seal and hold in this position during the next three steps.

### TO INSTALL NO. 495P3A HUB AND SEAL KIT:

**NOTE:** The No. 27615P Sealant (3M800) is not supplied in the kit.

- Thoroughly clean all foreign material from inner surface of outer tub flange.

**IMPORTANT:** All foreign material must be removed from inner surface of outer tub flange before installing No. 495P3A Hub and Seal Kit.

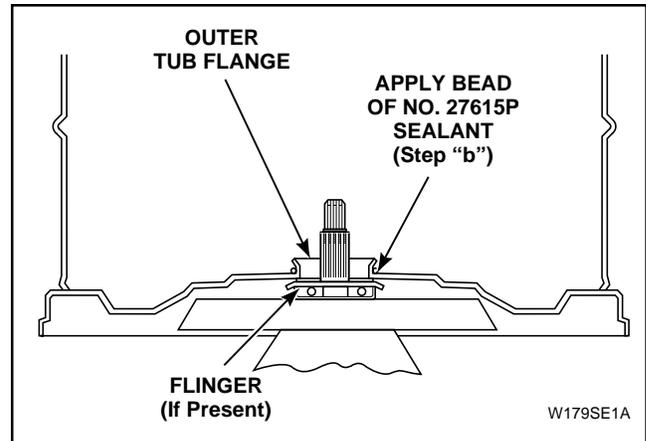


Figure 38

- Apply a small amount of No. 27615P Sealant (3M800) around outer surface of tub flange, *Figure 38*.

**IMPORTANT:** DO NOT allow sealant to come in contact with flinger, (if present) *Figure 38*, since this could prevent flinger from keeping moisture out of upper bearing.

- Apply a light film of non-staining petroleum jelly (such as Vaseline®) to bronze portion of water seal and to outer surface of stainless steel sleeve, *Figure 39*.

**IMPORTANT:** DO NOT over lubricate!

- Insert stainless steel sleeve into water seal from bottom of water seal, *Figure 39*, until stainless steel sleeve is flush with bronze portion of water seal.
- Leaving garter spring on water seal, place new water 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 (3M800) (not supplied with kit) around outer edge of water seal and tub (area located just below garter spring), *Figure 39*.

**IMPORTANT:** DO NOT allow sealant to contact sealing surface of water seal because it will cause a water leak.

(continued)

## ▲ WARNING

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

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

W003

- i. While holding down hub assembly, place new spline insert (with fingers pointing upward) over transmission tube until it bottoms out on hub assembly.

**IMPORTANT: Use spline insert (supplied in kit) when reinstalling large hex nut. DO NOT reuse any old spline insert because the large hex nut may loosen during washer operation.**

- j. Place large hex nut over transmission tube (with larger inside bevel toward spline insert) then finger tighten large hex nut.
- k. Torque large hex nut between 40 to 70 foot-pounds (5.56 to 9.73 Kgm).

**NOTE: If torque wrench is not available, place No. 237P4 Hex Wrench over large hex nut then tap hex wrench with a hammer until hub assembly turns or until large hex nut will no longer tighten.**

- l. To install No. 27125 washtub gasket, follow these steps:
1. Thoroughly clean all foreign material from seal surface area of hub and bronze bearing.
  2. Apply a small amount of nonstaining petroleum jelly (such as Vaseline®) to both surfaces where gasket will contact hub assembly and bottom of washtub.
  3. Carefully place No. 27125 washtub gasket (supplied in kit) on hub assembly.

**NOTE: Ensure holes in gasket are aligned with holes in hub assembly and all traces of original washtub gasket are removed from bottom of washtub.**

- m. Grasp top flange of washtub and carefully lower washtub down onto gasket and hub assembly.

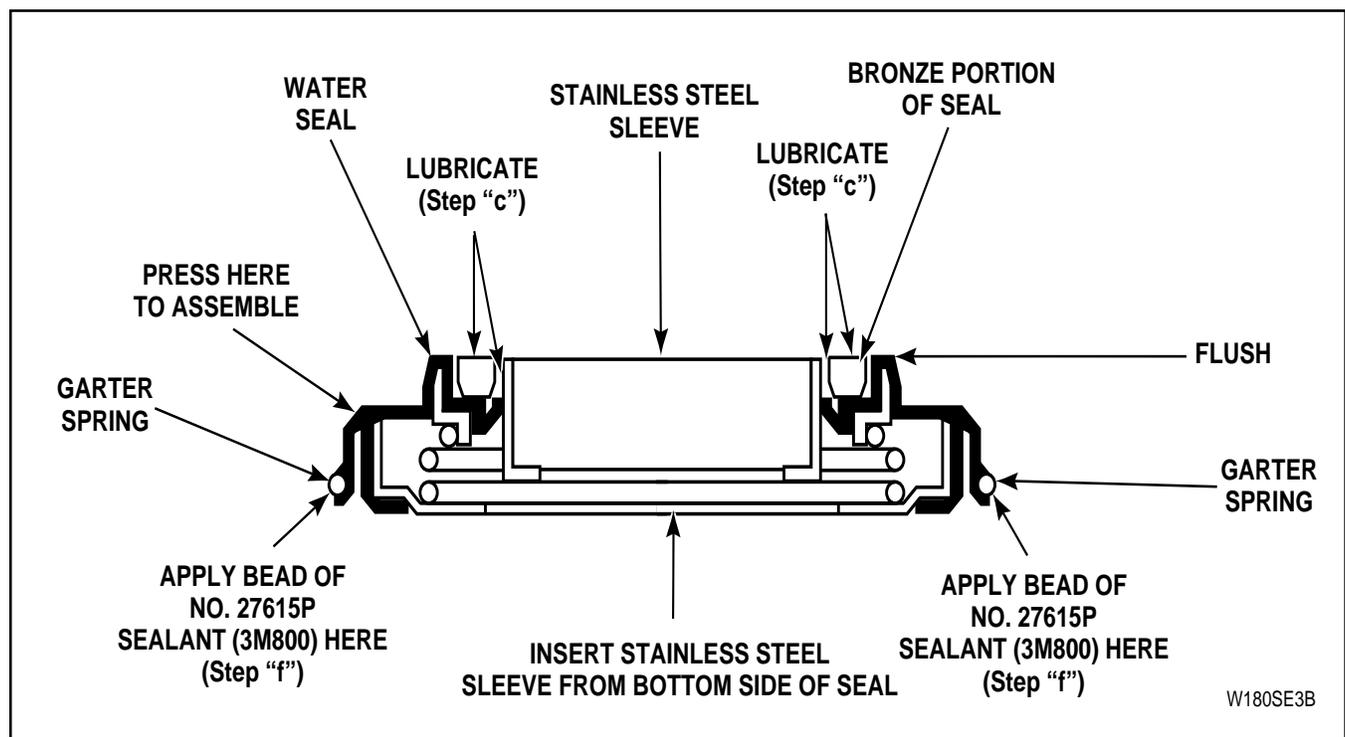


Figure 39

## ▲ WARNING

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

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

W003

**IMPORTANT:** Before setting washtub into place, make sure holes in hub assembly are aligned with holes in gasket.

- n. Secure washtub to hub assembly using four cap screws and four gaskets from 27202P Screw and Gasket Kit, (supplied in kit).
- o. Install supplied outer tub cover gasket and outer tub cover, paragraph 21.

**IMPORTANT:** When installing outer tub cover always use a new outer tub cover gasket.

- p. Install drive bell and seal, paragraph 18.
- q. Reinstall agitator.
- r. Reinstall cabinet top and front panel.
- s. Close loading door, set washer timer to final spin, start washer and allow empty washtub to spin for 30 to 60 seconds.

**IMPORTANT:** Setting washer to spin allows petroleum jelly (applied to bronze portion of water seal) a chance to cover seal surface before water is added to washer.

### 23. OUTER TUB ASSEMBLY

- a. Remove hub and seal kit, paragraph 22.

**NOTE:** When reinstalling or replacing outer tub, always install a new No. 495P3A Hub and Seal Kit, paragraph 22.

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

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

- c. 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.

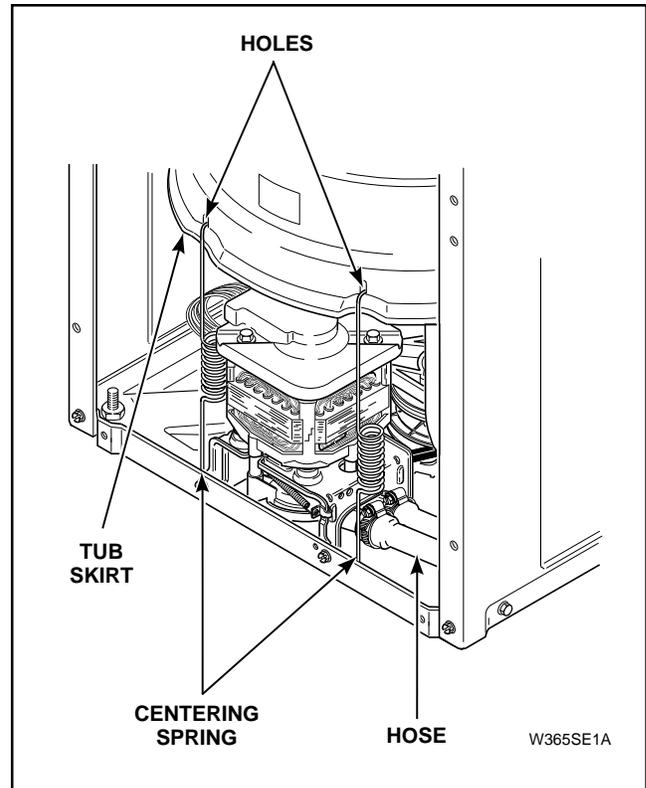


Figure 40

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 drive belt, and a chipped idler pulley will damage belt.

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

- d. Using No. 289P4 Spring Hook Tool, unhook seven centering springs from lower edge of outer tub skirt, *Figure 40*.

**IMPORTANT:** When installing centering springs, make sure spring hook is fully seated in hole in tub skirt. Mark the word "FRONT" on front side of outer tub so complete tub module can be reinstalled in same position.

(continued)

## ▲ WARNING

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

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

W003

- e. Disconnect hose from bottom of outer tub.
- f. Remove pressure hose from pressure switch.
- g. Grasp outer tub and lift complete tub module assembly (with transmission, balance ring and pivot dome attached) straight up and out of washer cabinet.
- h. Turn outer tub upside-down and set on protective padding.
- i. Remove screws holding each support leg to outer tub, *Figure 41*. Then lift transmission, balance ring and pivot dome off tub.

- j. Turn outer tub upright and remove tape holding pressure hose to outer tub then remove pressure bulb and grommet.

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

**NOTE:** To prevent porcelain damage, leg plates must be installed on outside of outer tub flange when reinstalling support legs. Do not overtighten screws as this could cause stripping or porcelain damage. Tighten screws between 90 and 130 inch-pounds (10.3 to 14.87 N-m).

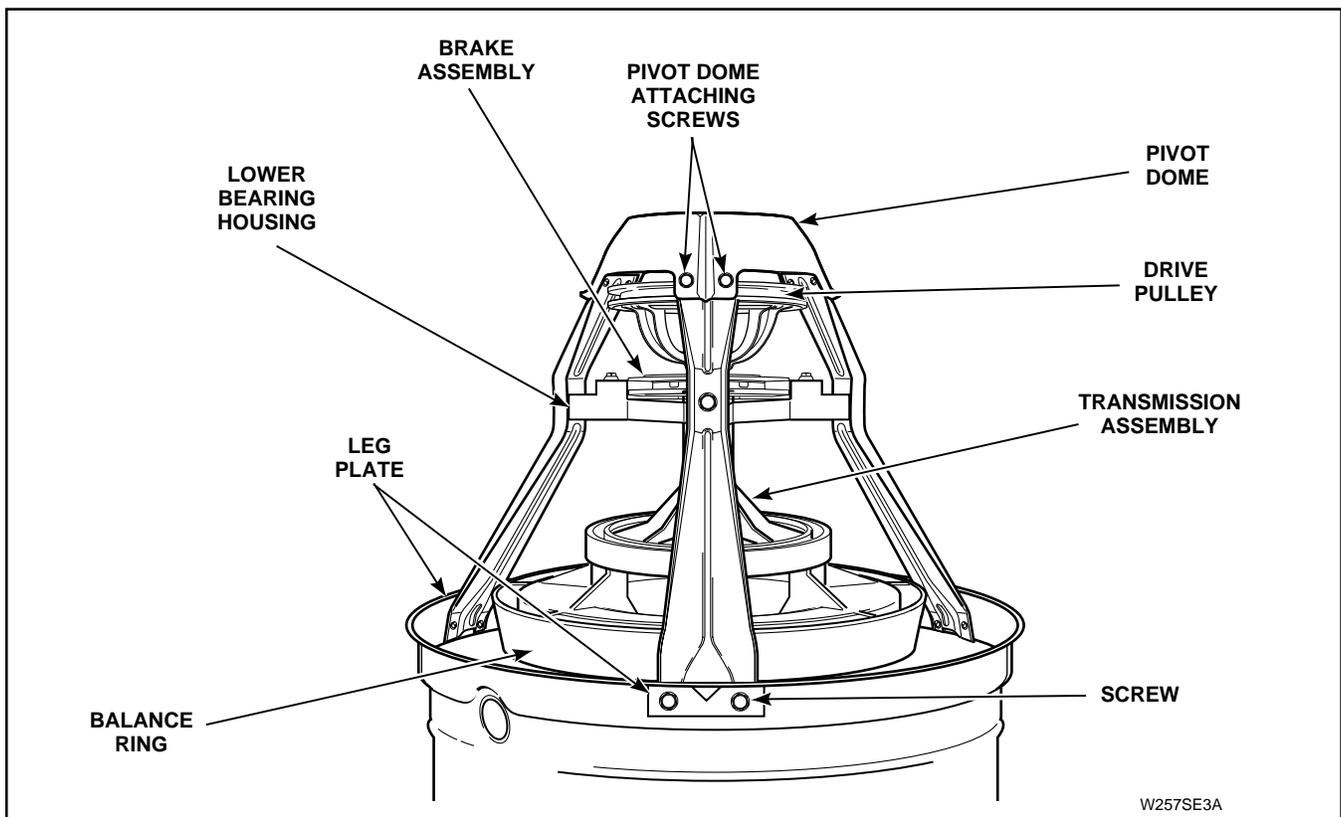


Figure 41

## ▲ WARNING

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

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

W003

### 24. DRIVE PULLEY AND HELIX

- Remove outer tub assembly from washer, paragraph 23.
- Remove cap screw, washer and helix holding drive pulley to input shaft of transmission assembly, *Figure 42*.
- Lift drive pulley up and out from between tub support legs.

**IMPORTANT: DO NOT OVER LUBRICATE!**  
Excess lubricant can be thrown into pivot dome area during normal operation of washer. Any lubricant on pivot dome or isolator will cause premature tripping of the out-of-balance switch. This condition will persist until lubricant is removed.

**NOTE:** When reinstalling pulley, place a small amount of No. 03200P Lubricant to top side of drive pulley that will be contacting flat washers. Lubricate helix ramps and bore with a small amount of No. 03200P Lubricant. See *Figure 43*.

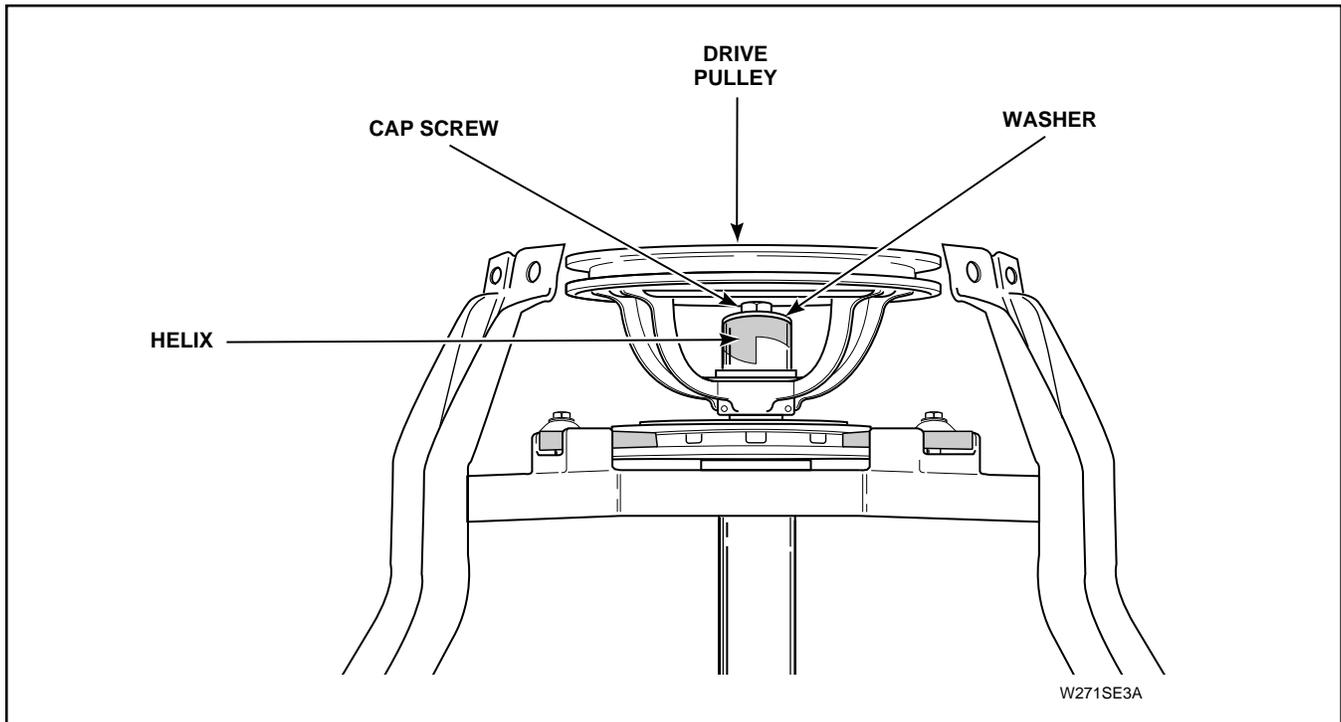


Figure 42

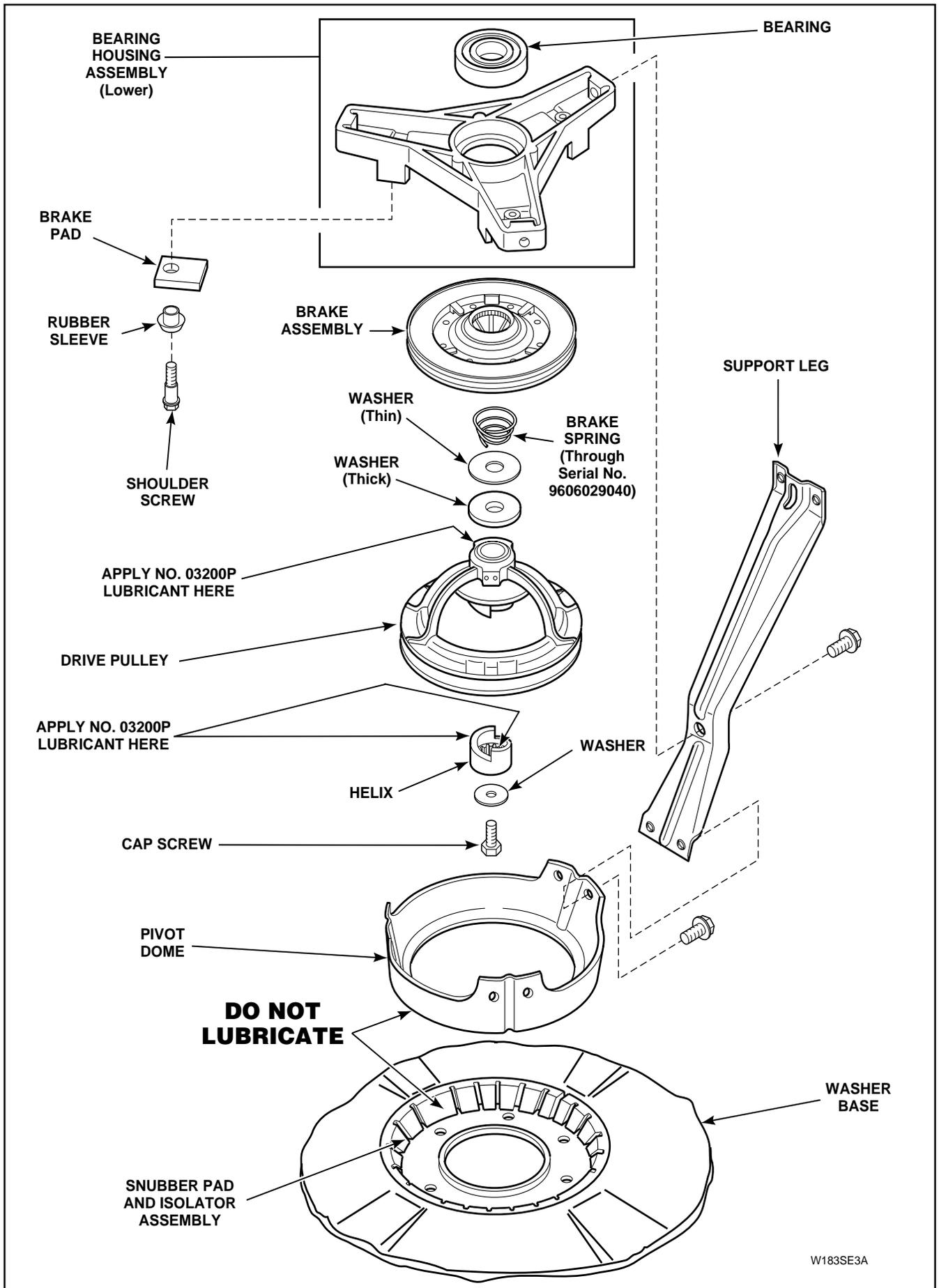


Figure 43

## **▲ 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

### 25. BRAKE ASSEMBLY

- a. Remove drive pulley and helix from outer tub, paragraph 24.
- b. Remove two flat washers from transmission shaft, *Figure 43*.

**IMPORTANT:** Two large flat washers must be in place between brake spring and drive pulley when reassembling. Thicker washer must contact top side of drive pulley. See *Figure 43* for assembly sequence.

- c. **Through Serial No. 9606029040 —**  
Using a right angle needle nose pliers, remove brake spring from around lower transmission tube (located inside brake assembly), *Figure 43*.

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

- d. Remove three screws holding brake pads, rubber sleeves and brake assembly to lower bearing housing, *Figure 43*, then remove brake assembly and pads off bottom of transmission assembly.

**IMPORTANT:** When reinstalling brake assembly, we recommend replacing 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 brake assembly.

**IMPORTANT: DO NOT OVER LUBRICATE!** Excess lubricant can be thrown into pivot dome area during normal operation of washer. Any lubricant on pivot dome or snubber pad and isolator assembly will cause premature tripping of the out-of-balance switch. This condition will persist until lubricant is removed.

**NOTE:** Refer to *Figure 43* for assembly sequence.

**IMPORTANT:** When installing brake spring (if used), make sure it is inserted into groove in large splines of lower transmission tube. Use tool, No. 242P4, for installing brake spring.

- e. After brake is installed, put washer through the following check to make sure brake is operating properly.
  1. Turn off electrical power to washer.
  2. Turn drive pulley one complete revolution in agitation direction, then push drive pulley up against brake.
  3. Check for a .030 (.76 mm) minimum gap between drive pulley and **helix** ramp surfaces.

**IMPORTANT:** If gap is less than .030 (.76 mm), brake may not stop washtub from spinning in the required seven seconds because brake will not close properly.

4. Turn on electrical power to washer and start washer in final spin.

**NOTE:** After washtub has been spinning for two minutes, spin speed should be approximately 580 RPM. If not, the cause could be dragging brake pads. If problems occur with steps 3 or 4, remove brake assembly and correct problem.

## **▲ 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

### **26. LOWER BEARING HOUSING**

- a. Remove brake assembly from outer tub, paragraph 25.
- b. Remove three screws holding lower bearing housing to tub support legs, *Figure 43*.
- c. Rotate bearing housing past legs, then carefully lift bearing housing off transmission tube.

**NOTE:** It may be necessary to loosen one leg from outer tub to rotate bearing housing. Tap lightly on housing to loosen it from transmission tube.

**IMPORTANT:** When installing lower bearing housing, apply No. 27604P Anti-Seize Compound to area of transmission tube that will be contacting bearing, *Figure 44*.

#### **BEARING REMOVAL:**

- a. Support bearing housing around outside diameter of bearing opening and carefully press bearing out of housing.
- b. Clean all foreign material from inner 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.

### **27. TRANSMISSION ASSEMBLY**

- a. Remove lower bearing housing from outer tub, paragraph 26.

**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, *Figure 44*.

To prevent porcelain damage, leg plates must be installed on outer tub flange when reinstalling support legs. (The plates must be installed on outside of tub flange.) Do not overtighten screws as this could cause stripping or porcelain damage. Torque screws between 90 to 130 inch-pounds (10.3 to 14.87 N-m).

- b. Remove four screws and lockwashers holding transmission assembly to balance ring, *Figure 44*, then 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, *Figure 44*.

**NOTE:** If there is no mark on balance ring before disassembly, mark it and also note the position of rack on transmission assembly, *Figure 44*.

When reinstalling transmission assembly, note, if there is a mark located on outer edge of balance ring, this mark (if present) indicates the light side of ring. This light side must be installed at a 9 o'clock position with center of rack at 12 o'clock when viewed from top of transmission, *Figure 44*. Carefully lower transmission through balance ring and upper bearing. **DO NOT DROP OR LOWER TRANSMISSION ASSEMBLY INTO POSITION TOO HARD**, this can cause bearing to move within bearing housing which will cause vibration, noise, wear or no spin.

**▲ 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

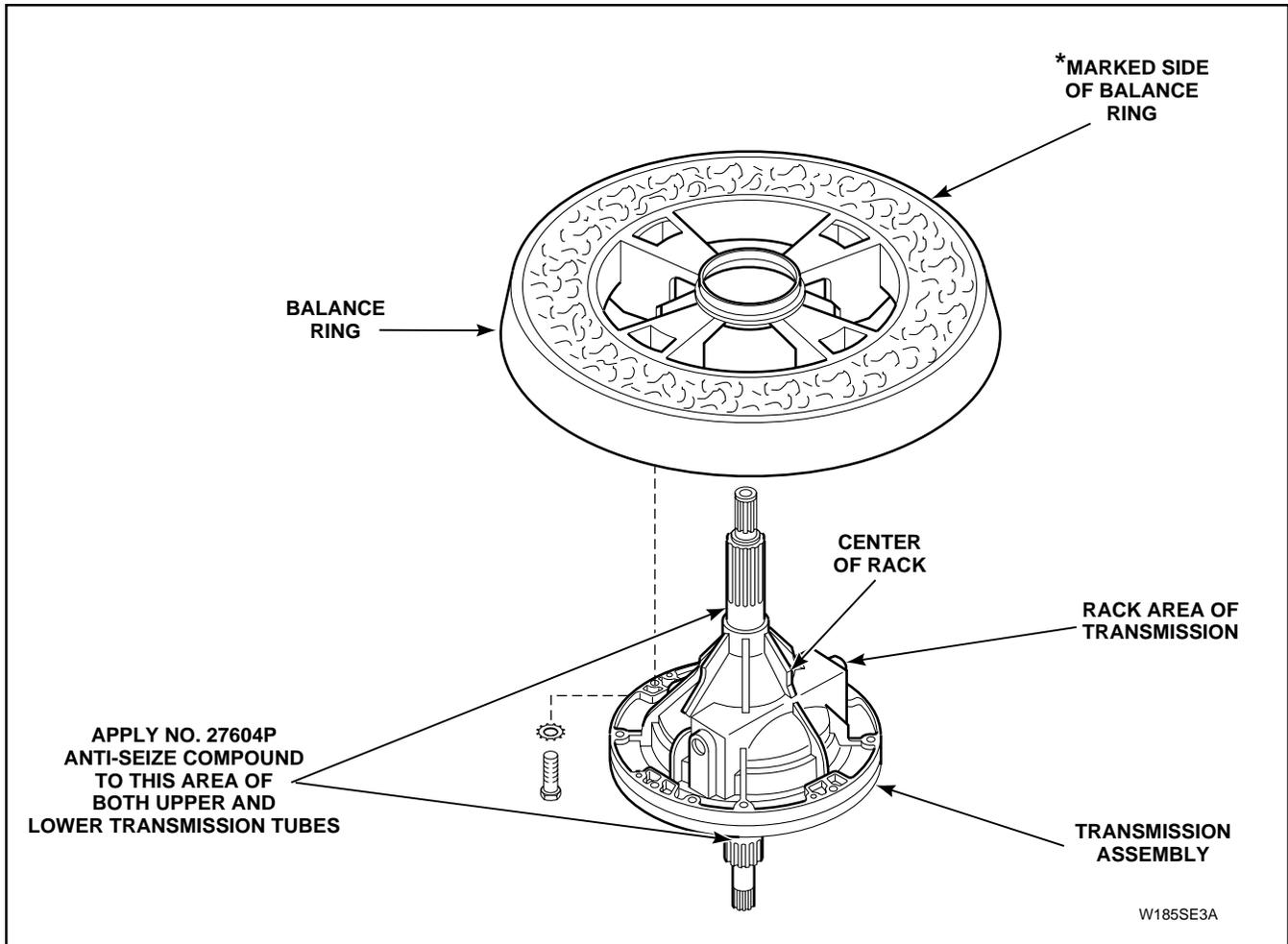


Figure 44

\* NOTE: If there is no mark on balance ring before disassembly, mark it and also note the position of rack on transmission assembly, Figure 44.

## **▲ WARNING**

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

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

W003

### **TRANSMISSION DISASSEMBLY: (Refer to Figure 45 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 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 twelve, four, and seven 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 the vise.
- f. While holding transmission by cover end, gently tap each of the three remaining screws until the two halves separate. Place assembly back into vise (cover end up) and remove three screws and lockwashers.
- g. Remove screw and washer holding reduction gear to transmission cover and remove gear.
- h. Remove special screw, lockwasher and flat washer holding drive pinion to input shaft.

**NOTE: To prevent input shaft from turning during removal of special screw, place an old 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 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. Individual components are not available separately.**

- k. Remove internal gear, slide and rack from transmission case.
- l. Remove transmission case from vise and drain the 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 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.**

### **TO REASSEMBLE TRANSMISSION ASSEMBLY**

**IMPORTANT: Wash all 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. Carefully insert output shaft and washer into transmission case.
- 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 the 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 case where internal gear will ride.**

## **▲ WARNING**

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

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

W003

- g. 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 an 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: End of shaft with identification groove, *Figure 45*, must be facing outward. This is the end that will mate with helix.**

- j. 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 shaft.**

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

- k. Place reduction gear on stub shaft of cover and install screw and washer.  
l. Apply a bead of sealant, No. 37577P, (or permatex ultra blue) on mating surface of transmission case.

**IMPORTANT: Bead of sealant should be no more than one sixteenth inch in diameter. **DO NOT** allow any sealant to contact edges of internal gear (sealer may damage moving parts).**

**NOTE: Starting with Serial No. 9604069377, the two dowel pins in the transmission cover were removed. A transmission pin tool, Part No. 305P4, must be used to align the cover and case when reassembling the transmission after repair. The transmission pin tool must be used in sets of two and placed in the same holes that the dowel pins were in. Both transmission pin tools must be left in place until all eight screws and nuts have been installed and tightened firmly, then remove the two pins.**

- m. 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.  
n. Carefully lower cover onto case.  
o. Secure two transmission halves together, using eight screws removed during disassembly. Tighten eight screws evenly.  
p. Remove complete transmission assembly from vise.  
q. Apply anti-seize compound, No. 27604P, to smooth area of both transmission tubes that will be contacting upper and lower bearings, *Figure 44*.

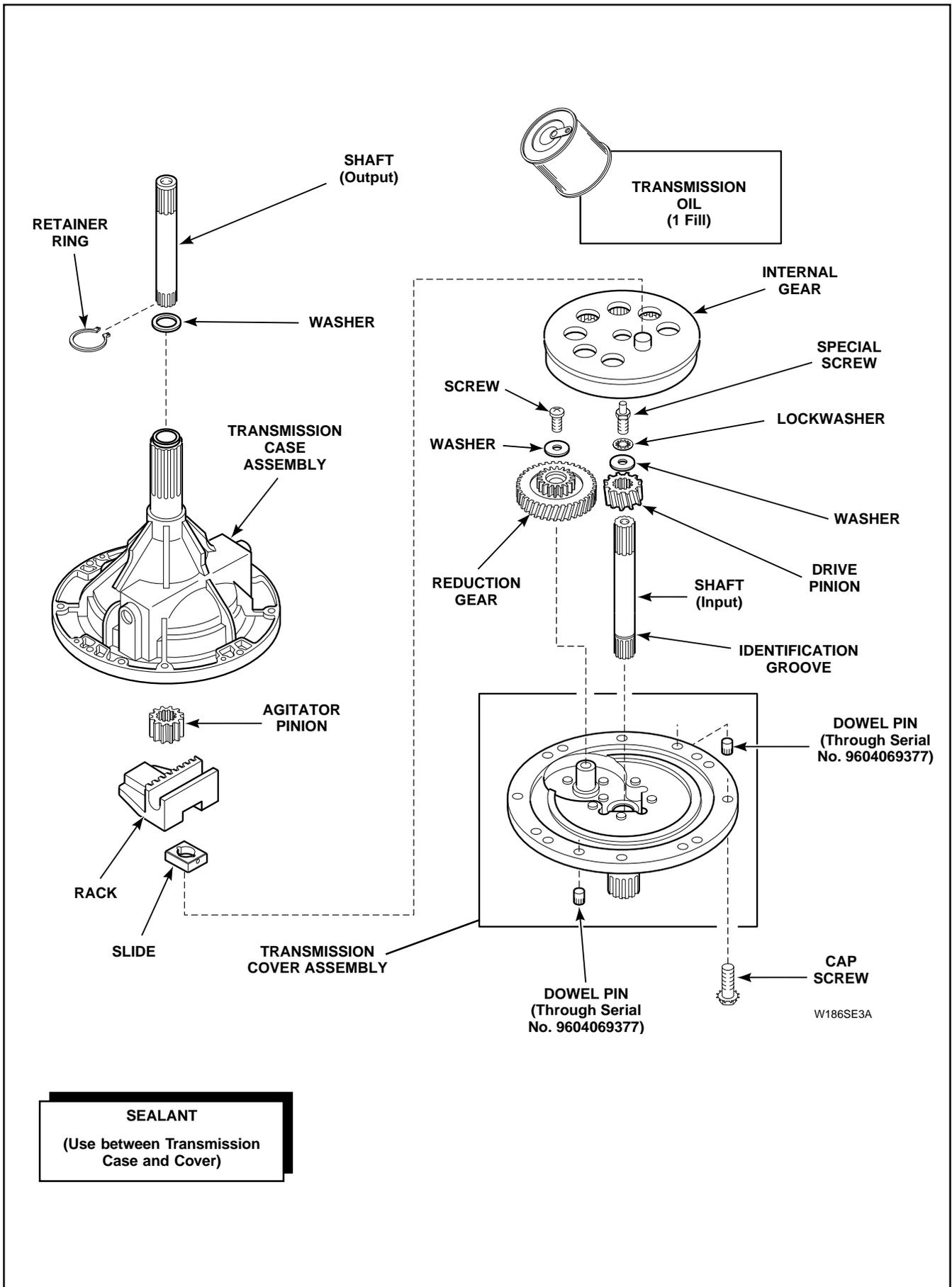


Figure 45

## ▲ 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

### 28. BALANCE RING

- Remove transmission assembly, paragraph 27.
- Lift balance ring off outer tub.

**IMPORTANT:** When reinstalling balance ring, note, if there is a mark located on outer edge of balance ring, this mark (if present) indicates light side of ring. This light side must be installed at a 9 o'clock position with center of rack at 12 o'clock when viewed from top of transmission, *Figure 44*.

**NOTE:** If there is no mark on balance ring before disassembly, mark it and also note the position of rack on transmission assembly, *Figure 44*.

### 29. UPPER BEARING ASSEMBLY

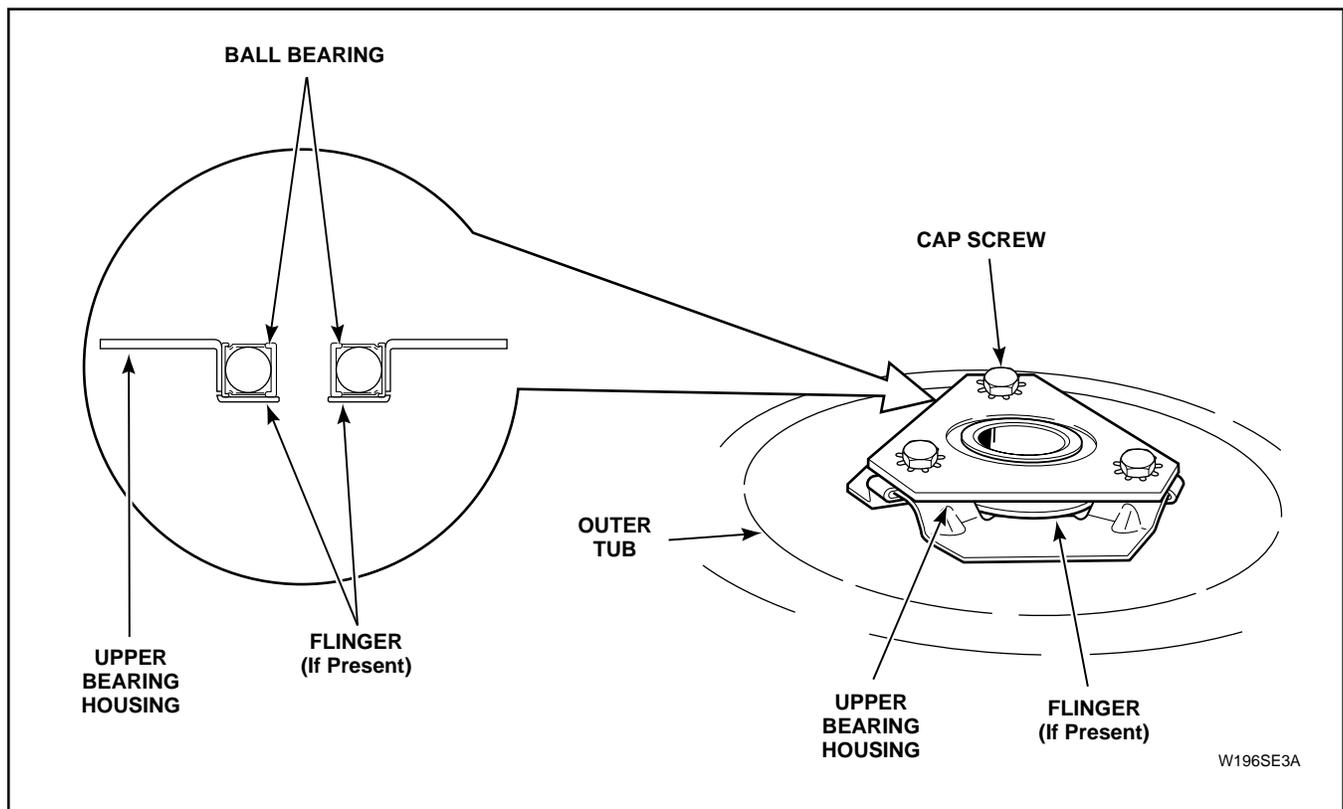
- Remove transmission assembly, paragraph 27.
- Remove screws holding each support leg to outer tub, *Figure 41*.
- Lift complete pivot dome (with drive pulley, brake assembly, lower bearing housing, transmission assembly, and balance ring attached) off outer tub.

**IMPORTANT:** To prevent porcelain damage, leg plates must be installed on outer tub flange when reinstalling support legs. (Plate must be installed on the outside of tub flange). Do not overtighten screws as this could cause stripping or porcelain damage.

- Remove three screws holding upper bearing and housing to bottom of outer tub, *Figure 46*.

**NOTE:** Replace bearing and housing as an assembly, and make sure flinger (if present) is properly positioned between outer tub and bearing assembly, *Figure 46*.

**NOTE:** When reinstalling upper bearing assembly, applying a retaining compound to threads of cap screws.



W196SE3A

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

### 30. SNUBBER PAD AND ISOLATOR ASSEMBLY

- Remove outer tub, paragraph 23.
- Locate split end of snubber pad and isolator assembly strip and using a flat blade screwdriver, carefully unsnap snubber pad and isolator assembly from pivot dome area of washer base, *Figure 47*.

#### SNUBBER PAD AND ISOLATOR ASSEMBLY INSTALLATION:

- Starting at elongated hole in pivot dome area of washer base, place one end of snubber pad and isolator assembly into elongated hole, then snap pins on snubber pad and isolator assembly into their respective holes in the base. It may require shifting snubber pad and isolator assembly to get two ends of strip to meet in area of elongated hole.

**IMPORTANT: DO NOT APPLY ANY LUBRICANT** to surface of snubber pad and isolator assembly or pivot dome. Any lubricant on pivot dome or isolator will cause premature tripping of the out-of-balance switch.

- Clean surface of pivot dome. Then carefully place tub module back into washer making sure pivot dome is positioned properly in dome recess of washer base.

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

- Use No. 289P4 Spring Hook Tool and starting with rear springs, hook seven centering springs into lower edge of outer tub skirt, *Figure 40*.

**IMPORTANT:** When installing centering springs, make sure spring hook is fully seated in hole in tub skirt, *Figure 40*.

- Connect hose to bottom of outer tub, tighten hose clamp.
- Reconnect idler spring to clip on motor mounting bracket, *Figure 17*.
- 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.
- Route the pressure hose as shown in *Figure 48*. Then route pressure hose back up through hole in cabinet top.
- Reconnect filler hose to tub cover, *Figure 34*.

**NOTE:** When reinstalling filler hose, white line on hose that connects to tub cover must be aligned with line located on top side of outer tub cover, *Figure 34*. Make sure hose is in its natural position (not kinked or twisted). If it is not, loosen hose clamp and straighten hose.

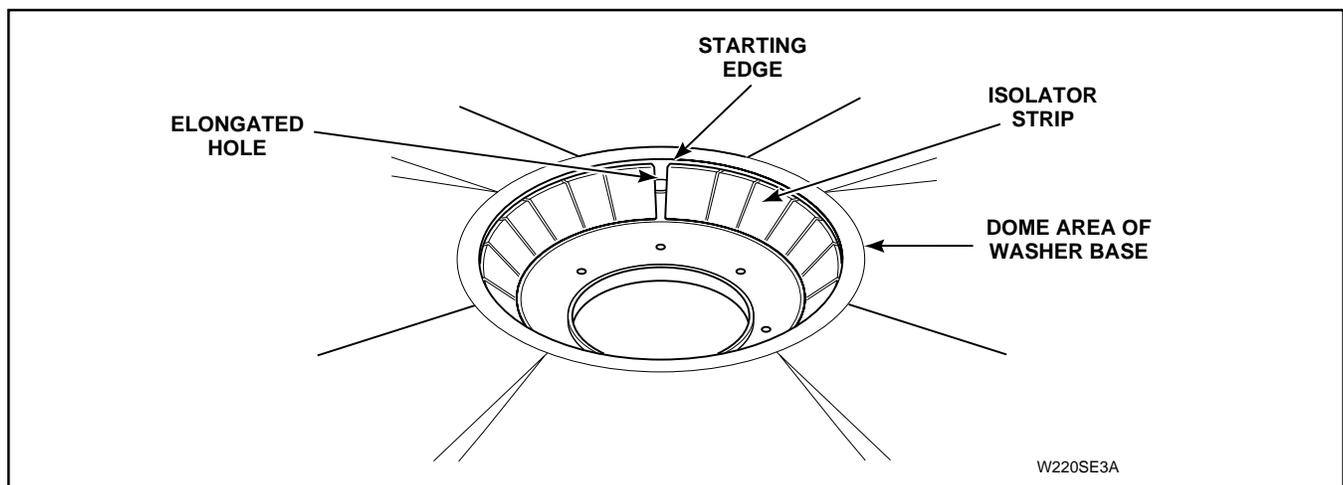


Figure 47

**▲ 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

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

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

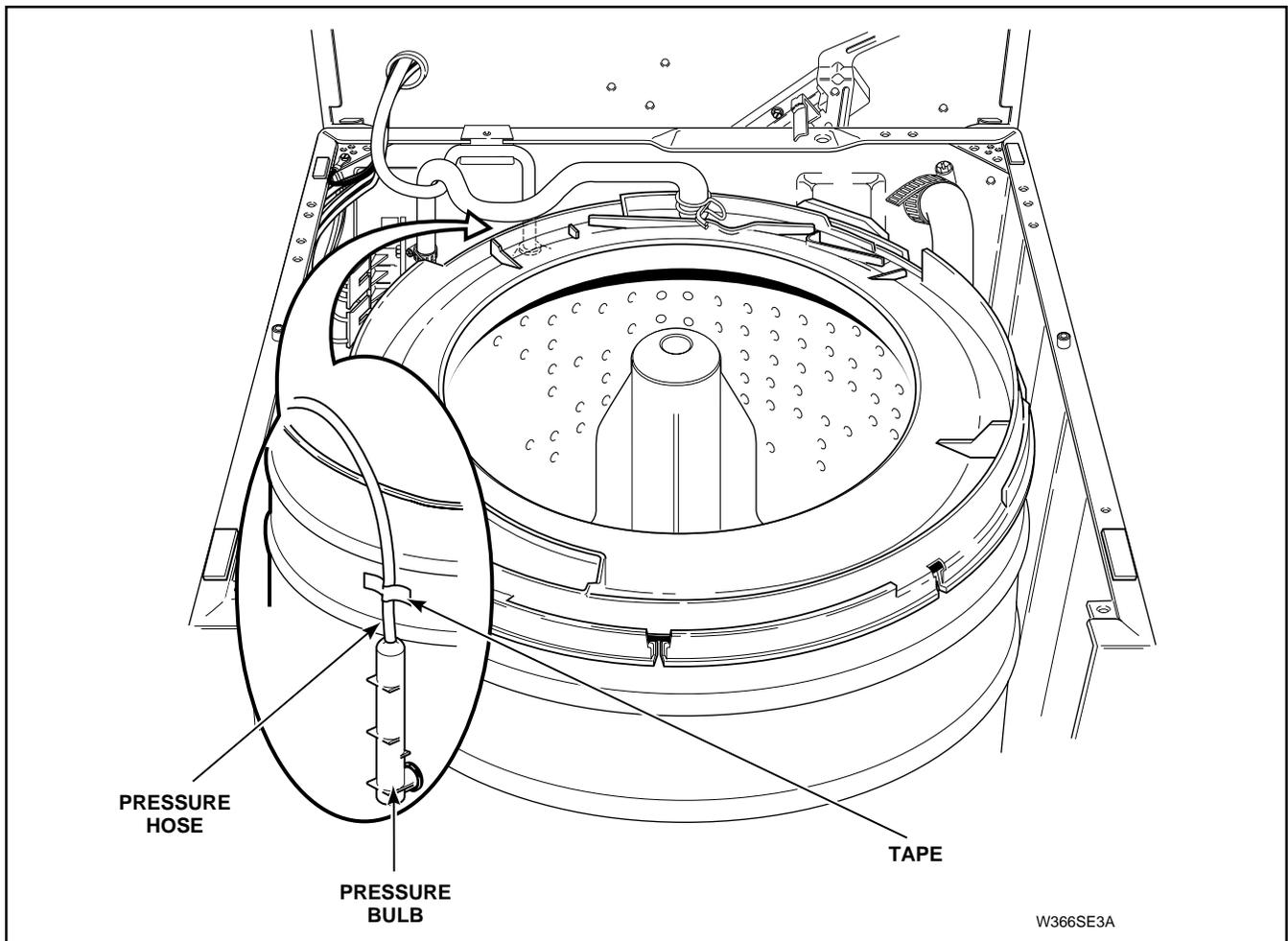


Figure 48

# SECTION III

## Adjustments

### 31. LEVELING LEGS (Refer to *Figure 49*)

- Place rubber feet on all four leveling legs.
- Place washer in position on a clean, dry, and reasonably firm floor.
- Loosen locknuts and adjust two front leveling legs. Once adjusted, tilt washer forward on front legs and lower back down into position to set rear self-leveling legs.
- Washer must not rock. After washer is at desired height, tighten locknuts securely against bottom of washer base. If these locknuts are not tight, washer will not remain stationary during operation.
- Install rear extension leg kit, No. 566P3, (optional equipment at extra cost) to raise height of washer.

**NOTE:** Washer should be installed on a reasonably firm floor. Flexing of a weak floor may cause excessive vibration. Vibration can also be caused if washer is installed on carpeting or a cushioned vinyl floor.

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

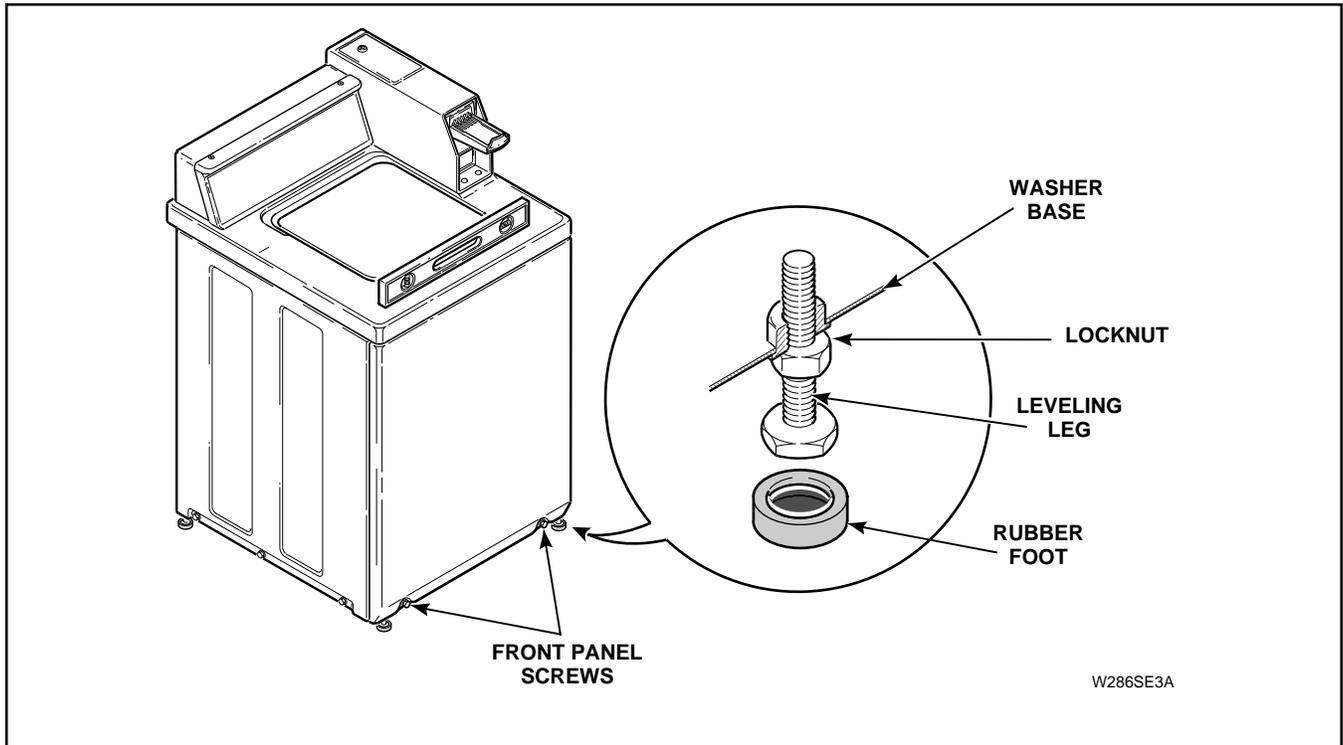


Figure 49

### 32. PRESSURE SWITCH (Refer to *Figure 50*)

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

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

Maximum water fill level can be increased by turning adjusting screw **CLOCKWISE**, and decreased by turning screw **COUNTERCLOCKWISE**.

One quarter turn of adjusting screw represents approximately one inch (25.4 mm) 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 switch may be damaged and flooding could result.

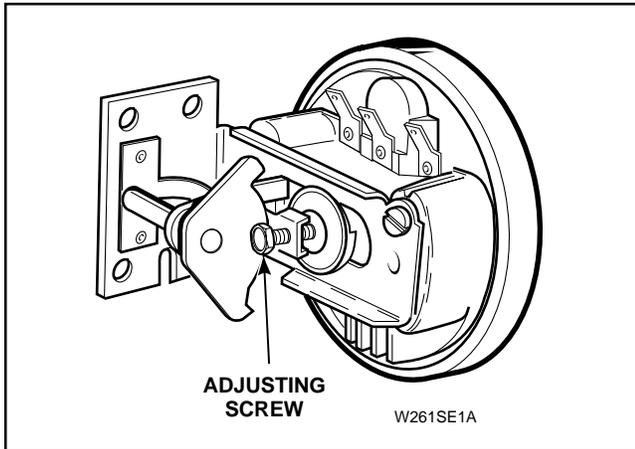


Figure 50

### 33. OUT-OF-BALANCE SWITCH

- Raise cabinet top assembly, paragraph 16.
- Check for bent actuator arm or lever, *Figure 51*.

**IMPORTANT:** If switch lever repeatedly trips the out-of-balance switch, check centering of agitator within loading door opening. If tub module is not centered within opening, centering spring(s) may have been overstretched. Replace necessary spring(s) and recheck centering, *Figure 52*.

**IMPORTANT: DO NOT APPLY ANY LUBRICANT** to surface of snubber pad and isolator assembly or pivot dome. Any lubricant on pivot dome or isolator will cause premature tripping of out-of-balance switch.

### 34. BELT (Agitate and Spin)

No belt adjustment is required.

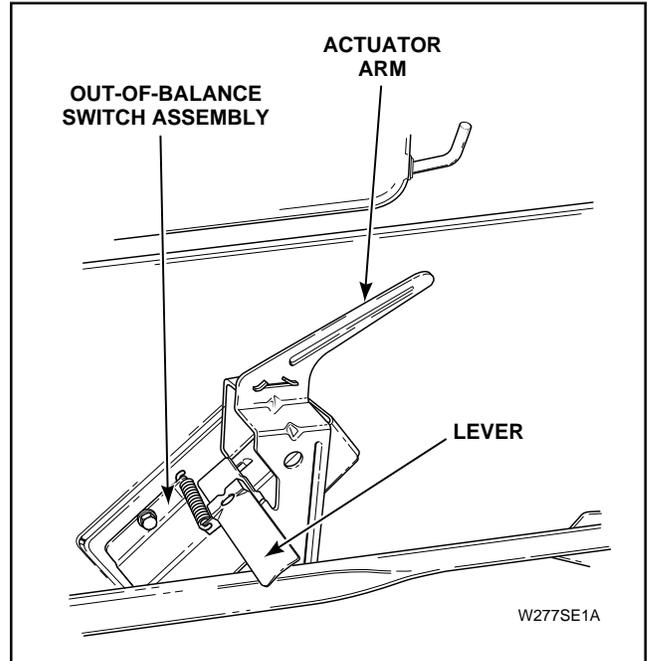


Figure 51

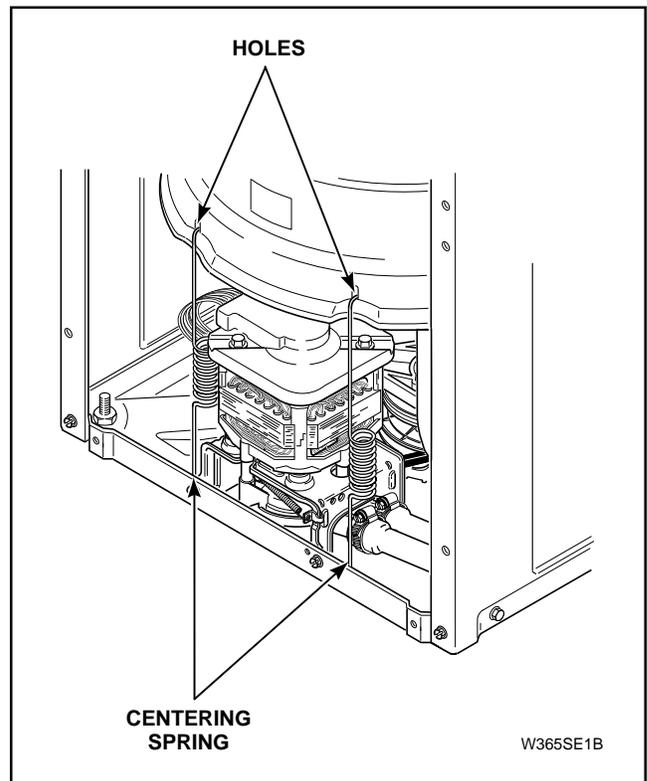


Figure 52

# SECTION IV

## Service Helps

### ▲ 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.

### 35. 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.

### 36. 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

**37. NO WARM WATER**

POSSIBLE CAUSE	TO CORRECT
No hot water.	Refer to paragraph 35.
No cold water.	Refer to paragraph 36.

**38. WATER FILL DOES NOT STOP AT PROPER LEVEL**

POSSIBLE CAUSE	TO CORRECT
Inoperative pressure switch.	Test switch and replace if inoperative.
Air leak in pressure hose.	Replace hose.
Sediment on or under mixing valve diaphragm, defective diaphragm, or armature binding in armature guide.	Disassemble and clean mixing valve, or replace complete valve.
Broken, weak, or missing mixing valve armature spring.	Disassembly valve and replace spring, or replace complete valve.
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.	Install No. 562P3 Siphon Break Kit. Provide an air gap around drain hose and drain receptacle.
Water in pressure hose.	Blow air through hose to remove water.
Broken, loose, shorted, 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

**39. TIMER DOES NOT ADVANCE (Mechanical Timer Models only)**

<b>POSSIBLE CAUSE</b>	<b>TO CORRECT</b>
Timer is designed to pause during fill periods.	Allow completion of fill period.
Inoperative timer.	Test timer, and replace if inoperative.
Loading door is open.	Close loading door. Loading door <b>MUST</b> be closed any time washer is set to fill, agitate or spin.
Washer will not fill.	Timer pauses until pressure switch is satisfied.
Timer motor lead wire off timer terminal.	Refer to appropriate wiring diagram and reattach wire.
Broken, loose or incorrect wiring.	Refer to appropriate wiring diagram.
Timer is designed to pause when going from agitate to spin.	Allow time for timer to go through that step. See diagram for information on time required.
Timer is designed to stop if an out-of-balance load has been encountered while washing clothes load.	Open lid and automatically reset out-of-balance switch when lid is closed.
Timer is designed to stop if washer drive motor has been over loaded and motor thermal overload has tripped.	Motor thermal protector reset time may vary depending upon the reason for the washer overload, however, it should reset within 15 minutes. Check to ensure that washer was not overloaded with clothes.
Is circuit breaker to washer tripped, disconnecting power to washer.	Reset circuit breaker.
Washer will not fill.	Timer is designed to pause when going from spin into rinse to allow the washtub to stop spinning before filling, make sure that timer has advanced into fill portion of rinse cycle.

**▲ WARNING**

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

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

W003

**40. MOTOR DOES NOT RUN**

<b>POSSIBLE CAUSE</b>	<b>TO CORRECT</b>
Electrical power off, fuse blown, or power cord not plugged in.	Check laundry room for blown or loose fuse(s) or open circuit breakers. (Washer itself does not have an electrical fuse).
Loading door not closed or inoperative switch.	Close door or test switch and replace if inoperative.
Timer improperly set.	Reset timer, or try another cycle.
Inoperative timer.	Test timer and replace if inoperative.
Motor starting functions inoperative. No start; or motor hums only.	Check motor and replace if inoperative.
Motor is dead, will not run.	Check motor and replace if inoperative.
Motor overload protector has cycled.	Wait two or three minutes for overload protector to reset. If protector cycles repeatedly, refer to paragraph 43.
Bind in upper or lower motor bearing.	Remove belt and determine if motor shaft will spin. Replace motor if shaft is locked up.
Broken, loose, or incorrect wiring.	Refer to appropriate wiring diagram.
Power cord is miswired.	Refer to appropriate wiring diagram for correct wiring.

**41. NO AGITATION**

<b>POSSIBLE CAUSE</b>	<b>TO CORRECT</b>
Inoperative timer.	Test timer and replace if inoperative.
Inoperative action switch.	Test switch and replace if inoperative.
Motor will not run.	Check motor and replace if inoperative.
Inoperative pressure switch.	Test switch and replace if inoperative.
Broken, loose, or incorrect wiring.	Refer to appropriate wiring diagram.
Broken drive belt.	Replace belt.
Inoperative transmission assembly.	Replace transmission assembly.
Sheared motor pulley roll pin.	Remove drive motor, and replace roll pin and any other damaged parts.
Drive motor overload protector has cycled.	Refer to paragraph 43.
Bind in pump.	Replace pump.
Loading door is open or door switch is inoperative.	Close loading door or test switch and replace if operative.

**▲ 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

**42. CONSTANT AGITATION**

POSSIBLE CAUSE	TO CORRECT
Inoperative timer.	Test timer and replace if inoperative.
Shorted or incorrect wiring.	Refer to appropriate wiring diagram.
Inoperative transmission assembly.	Repair or replace transmission assembly.

**43. WASHER SMOKES, OVERHEATS, CYCLES ON MOTOR THERMAL OVERLOAD PROTECTOR, SWITCH ACTUATOR KICKS IN AND OUT**

POSSIBLE CAUSE	TO CORRECT
Belt is tacky and does not allow proper slip.	Check belt and replace if defective.
Belt tension is too great and does not allow proper slip.	Make sure idler spring is properly connected.
Inoperative timer.	Test timer and replace if inoperative.
Motor switch functions inoperative.	Check motor switch and replace if inoperative.
Bind in water pump.	Replace pump.
Brake pads binding.	Free binding pads, or replace pads.
Brake, transmission, or motor have locked up and will not turn.	Check that all these components are able to move freely. Correct binding component.
Incorrect voltage.	Contact local utility company, or have a qualified electrician check power supply.

**▲ 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

**44. SLOW SPIN OR NO SPIN**

<b>POSSIBLE CAUSE</b>	<b>TO CORRECT</b>
Inoperative timer.	Test timer and replace if inoperative.
Loading door is open or door safety switch is inoperative.	Close loading door, or test switch and replace if inoperative.
Bind in water pump.	Replace pump.
Broken drive belt.	Replace belt.
Washer has gone OUT-OF-BALANCE.	Open loading door to reset OUT-OF-BALANCE switch. Rearrange load in washtub.
Motor will not run.	Check motor and replace if inoperative.
Sheared motor pulley roll pin.	Remove drive motor and replace roll pin and any other damaged parts.
Motor overload protector has cycled.	Wait two or three minutes for overload protector to reset. If protector cycles repeatedly, refer to paragraph 43.
No clearance or stuck brake pads.	Free sticky brake pads or replace pads.
Broken, loose, or incorrect wiring.	Refer to appropriate wiring diagram.
Inoperative transmission assembly.	Repair or replace transmission assembly.

**45. CONSTANT SPIN**

<b>POSSIBLE CAUSE</b>	<b>TO CORRECT</b>
Inoperative timer.	Test timer and replace if inoperative.
Washtub does not stop spinning within seven seconds after loading door is opened.	Replace brake pads.
Excessive wear on brake pads, or missing brake pads.	Replace brake pads.
Shorted 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

**46. WASHER STOPS IN CYCLE; QUILTS AFTER A COUPLE LOADS; IS INTERMITTENT**

<b>POSSIBLE CAUSE</b>	<b>TO CORRECT</b>
Belt is tacky and does not allow proper slip.	Check belt and replace if defective.
Belt tension is too great and does not allow proper slip.	Make sure idler spring is properly connected.
Inoperative timer.	Test timer and replace if inoperative.
Broken, loose, or incorrect wiring.	Refer to appropriate wiring diagram.
Motor overload protector has cycled.	Wait two or three minutes for overload protector to reset. If protector cycles repeatedly, refer to paragraph 43.
Motor switch functions inoperative.	Check motor switch and replace if inoperative.
Brake, transmission, or motor have locked up and will not turn.	Check that all these components are able to move freely.

**47. WASHER IS LOCKED UP OR BINDING**

<b>POSSIBLE CAUSE</b>	<b>TO CORRECT</b>
Excessive belt tension.	Replace belt and/or idler spring.
Bind in upper or lower bearing.	Replace bearing.
Bind in water pump.	Replace pump.
Bind in transmission.	Repair or replace transmission.
Brake pads binding.	Free binding pads, or replace pads.
Incorrect voltage.	Contact local utility company, or have a qualified electrician check power supply.

**▲ 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. OUTER TUB DOES NOT EMPTY**

<b>POSSIBLE CAUSE</b>	<b>TO CORRECT</b>
Kinked drain hose.	Straighten hose.
Drain hose out of clamp in back of cabinet.	Remove washer front panel and install drain hose into clamp.
Inoperative water pump.	Replace pump.
Obstruction in outer tub outlet hose.	Remove obstruction.

**49. EXCESSIVE VIBRATION**

<b>POSSIBLE CAUSE</b>	<b>TO CORRECT</b>
Unbalanced load in tub.	Stop washer, redistribute load, then restart washer.
Broken, or disconnected centering spring(s).	Connect or replace centering spring(s).
Washer is not properly leveled.	Adjust leveling legs.
Washer is installed on weak, "spongy", carpeted or built-up floor.	Relocate washer, or support floor to eliminate weak or "spongy" condition.
Incorrect or loose cabinet screws.	Replace with correct screws or tighten.
Base damaged (washer was dropped).	Replace base assembly.
Balance ring not positioned properly on transmission assembly.	Refer to paragraph 27.
Lubricant on pivot dome and/or snubber pad and isolator assembly.	Remove lubricant.

**50. WATER LEAKING FROM OUTER TUB**

<b>POSSIBLE CAUSE</b>	<b>TO CORRECT</b>
Leaking water seal in outer tub.	Replace hub and seal kit assembly, paragraph 22.
Hole in outer tub.	Replace outer tub.
Pressure hose or pressure bulb leaking.	Replace pressure hose and/or pressure bulb.
Outer tub cover gasket leaking.	Replace gasket.
Obstruction in drain causing water to come over top of outer drain tub cover.	Remove obstruction.
Tub-to-pump hose leaking at clamp.	Tighten clamp.

# SECTION V

## Cycle Sequence Charts

FUNCTION		IN USE LIGHT	RINSE LIGHT	SPIN LIGHT	WATER TEMP.	CYCLE & *MOTOR SPEED	TIME (Min. & Sec.)
<b>W A S H</b>	WASH, FILL OR AGITATE	X			H, W, C	N = FAST PP = FAST D = SLOW	10:33
	PAUSE	X					:05
<b>S P I N</b>	SPIN	X		X		N = FAST PP = SLOW D = SLOW	1:56
	SPIN AND SPRAY	X		X	COLD	N = FAST PP = SLOW D = SLOW	:31
	SPIN	X		X		N = FAST PP = SLOW D = SLOW	:36
	SPIN AND SPRAY	X		X	COLD	N = FAST PP = SLOW D = SLOW	:07
	SPIN	X		X		N = FAST PP = SLOW D = SLOW	1:07
PAUSE		X					:04
<b>R I N S E</b>	RINSE FILL (Timer Motor Runs)	X	X		COLD		:36
	PAUSE OR FILL	X	X		COLD		:02
	RINSE, AGITATE OR FILL	X	X		COLD	N = FAST PP = FAST D = SLOW	3:03
PAUSE		X					:06
<b>S P I N</b>	SPIN	X		X		N = FAST PP = FAST D = FAST	10:32
TIMER MOTOR RUN OUT							:42
<b>TOTAL</b>							<b>30:00</b>

**KEY:**

H = HOT  
W = WARM  
C = COLD

N = NORMAL CYCLE  
PP = PERMANENT PRESS CYCLE  
D = DELICATE CYCLE  
X = INDICATOR LIGHT GLOWS

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

### Timer No. 36988 Cycle Sequence (Long Cycle - Kingston)

FUNCTION		IN USE LIGHT	RINSE LIGHT	SPIN LIGHT	WATER TEMP.	CYCLE & *MOTOR SPEED	EATON TIME (Min. & Sec.)
W A S H	Coin Slide Starting Stroke 17.82° (Mallory) 16.84° (Eaton)	X			H, W, C	N = FAST PP = FAST D = SLOW	:57
	AGITATE OR VARIABLE FILL	X			H, W, C	N = FAST PP = FAST D = SLOW	7:00
PAUSE		X					:21
S P I N	SPIN	X				N = FAST PP = SLOW D = SLOW	1:25
	SPIN AND SPRAY	X			COLD	N = FAST PP = SLOW D = SLOW	:45
	SPIN	X				N = FAST PP = SLOW D = SLOW	1:15
PAUSE		X					:04
R I N S E	FILL (Timer Motor Runs)	X			COLD		:13
	PAUSE OR FILL	X	X		COLD		:13
	AGITATE OR VARIABLE FILL	X	X		COLD	N = FAST PP = FAST D = SLOW	1:01
	X			:09			
PAUSE		X					:16
		X		X			:06
S P I N	SPIN	X		X		N = FAST PP = FAST D = FAST	6:00
PAUSE		X		X			:04
		X					:10
OFF							:18
<b>TOTAL</b>							<b>20:17</b>

**KEY:**

H = HOT  
W = WARM  
C = COLD

N = NORMAL CYCLE  
PP = PERMANENT PRESS CYCLE  
D = DELICATE CYCLE  
X = INDICATOR LIGHT GLOWS

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

## Timer No. 36986 Cycle Sequence (Short Cycle)

FUNCTION		IN USE LIGHT	RINSE LIGHT	SPIN LIGHT	WATER TEMP.	CYCLE & *MOTOR SPEED	TIME (Min. & Sec.)
W A S H	Coin Slide Starting Stroke 16.84° (Eaton)	X			H, W, C	N = FAST PP = FAST D = SLOW	1:23
	AGITATE OR VARIABLE FILL	X			H, W, C	N = FAST PP = FAST D = SLOW	10:00
PAUSE		X					:34
S P I N	SPIN	X				N = FAST PP = SLOW D = SLOW	1:32
	SPIN AND SPRAY	X			COLD	N = FAST PP = SLOW D = SLOW	:30
	SPIN	X				N = FAST PP = SLOW D = SLOW	1:29
PAUSE		X					:06
R I N S E	FILL (Timer Motor Runs)	X			COLD		:06
	PAUSE OR FILL	X	X		COLD		:20
	AGITATE OR VARIABLE FILL	X	X		COLD	N = FAST PP = FAST D = SLOW	3:19 :23
PAUSE		X					:24
PAUSE		X		X			:10
S P I N	SPIN	X		X		N = FAST PP = FAST D = FAST	8:30
PAUSE		X		X			:06
PAUSE		X					:13
OFF							:32
TOTAL							29:39

**KEY:**

H = HOT  
W = WARM  
C = COLD

N = NORMAL CYCLE  
PP = PERMANENT PRESS CYCLE  
D = DELICATE CYCLE  
X = INDICATOR LIGHT GLOWS

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

## Timer No. 36987 Cycle Sequence (Long Cycle)

# SECTION VI

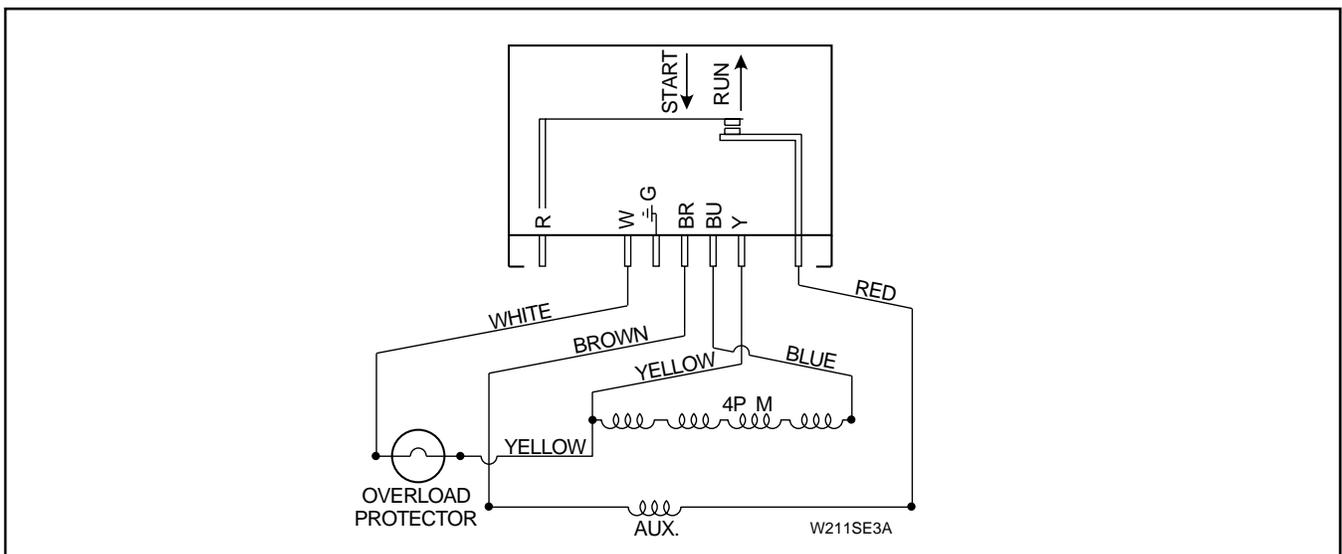
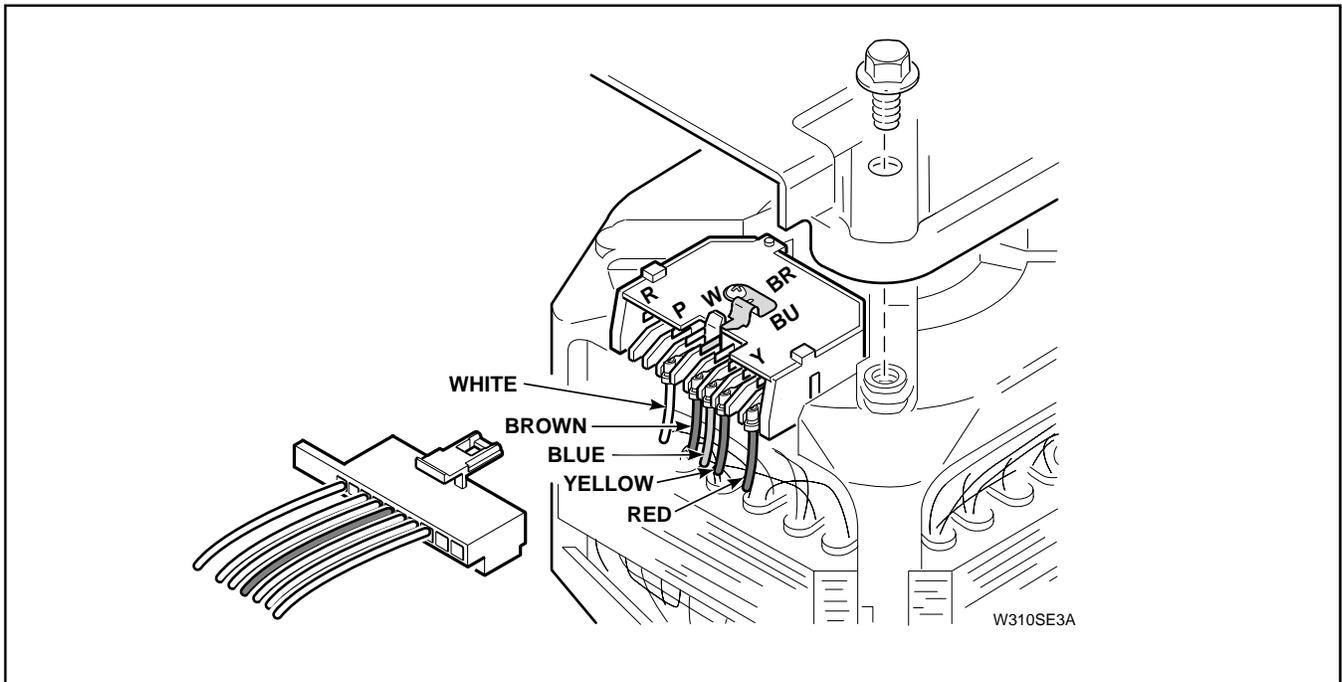
## Internal Wiring of Washer Motor Switch

### ▲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



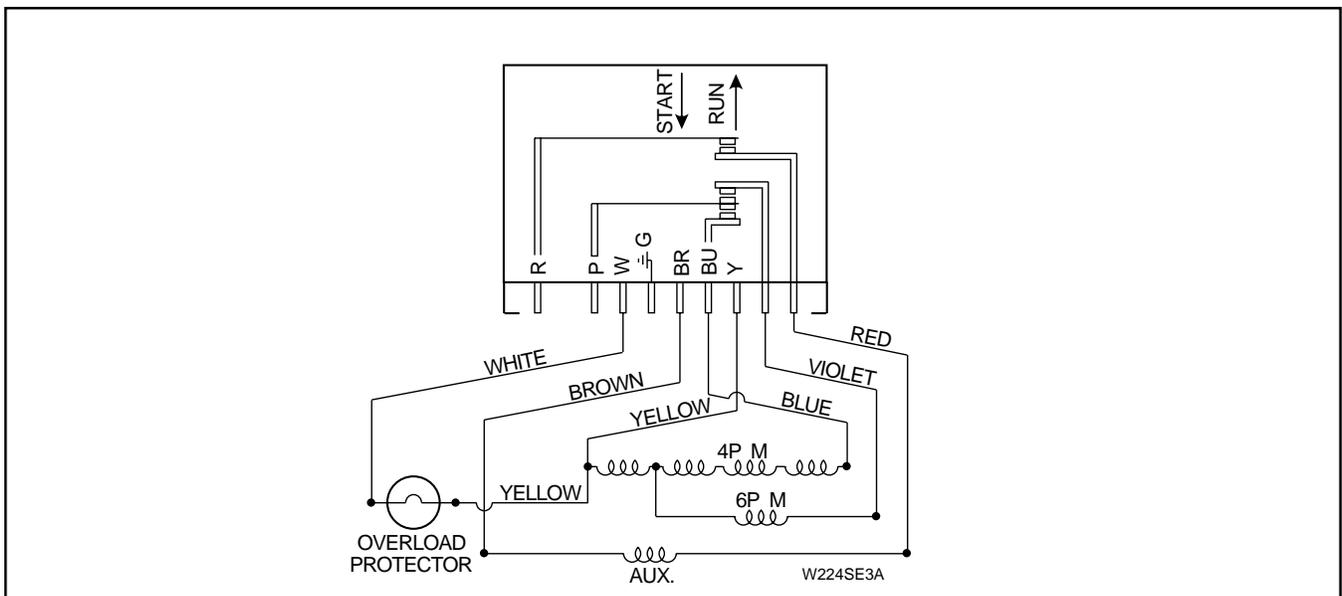
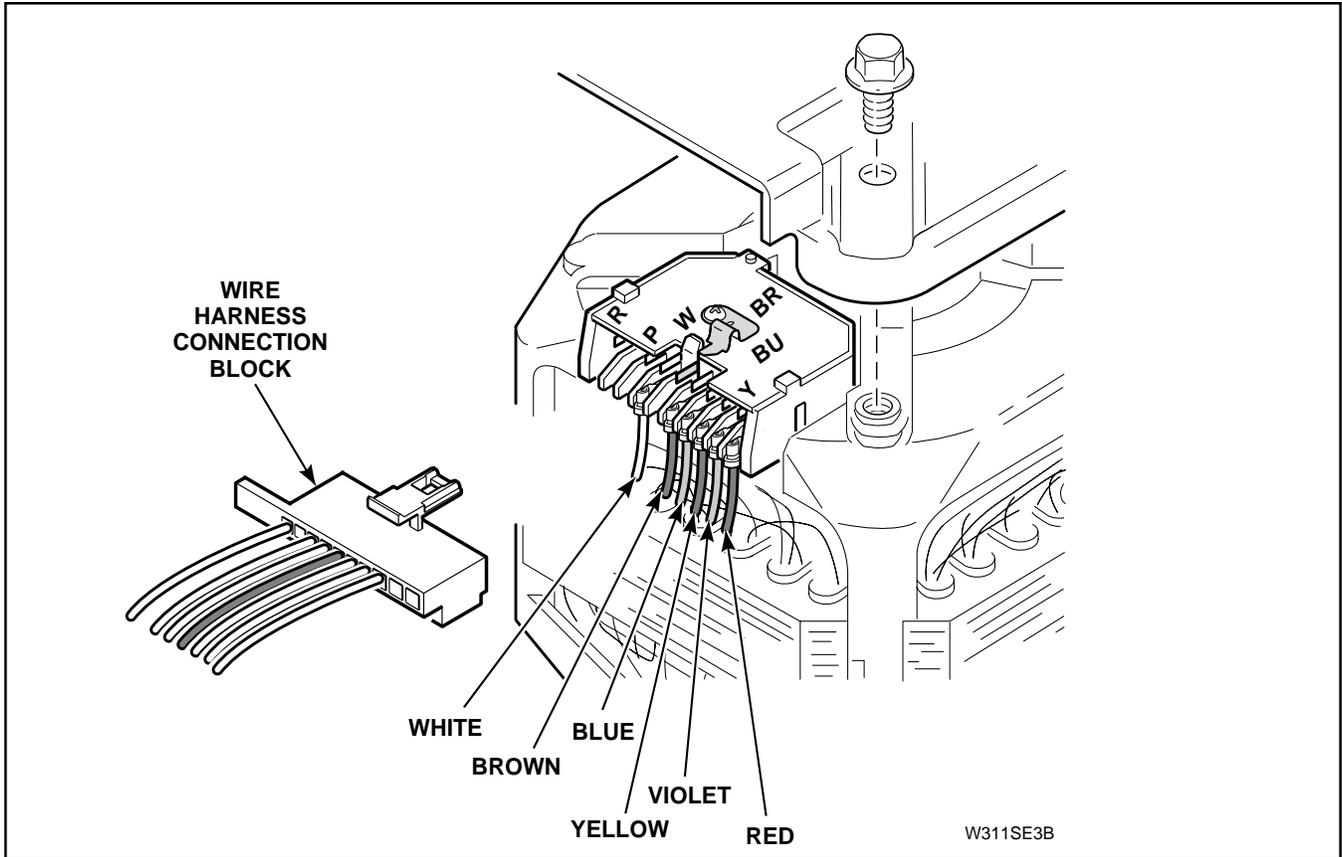
## Motor Assembly (1 Speed Motors)

**▲ 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



## Motor Assembly (2 Speed Motors)

