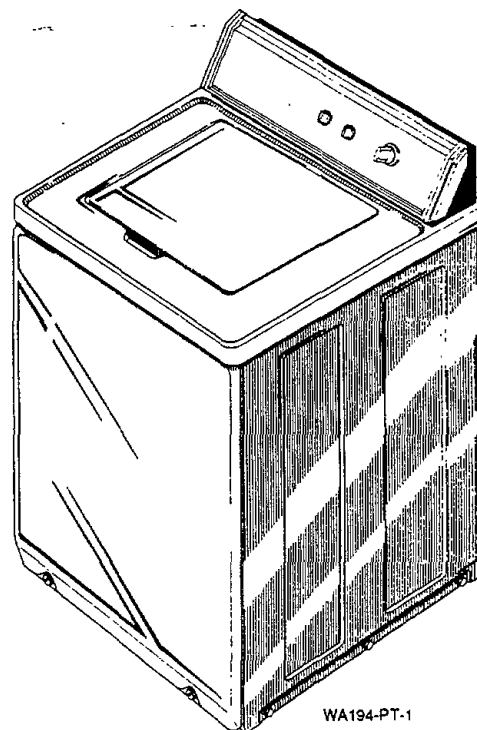


Service Manual for Automatic Washers

**(Model Numbers are
listed on Page 2)**



WA194-PT-1

▲ WARNING

Failure to install, maintain, and/or operate this machine 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 the Parts and Service Manual 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 property is properly grounded and to reduce the risk of fire, electric shock, serious injury, or death.

W006

▲ 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. It must be understood that common sense, caution and carefulness are factors which CANNOT be built into these products. These factors MUST BE supplied by the person(s) installing, maintaining or operating the product.

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.

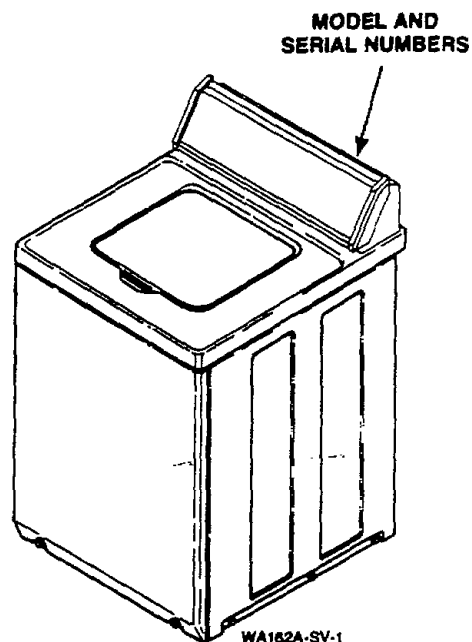
▲ WARNING — Hazards or unsafe practices which COULD result in serious injury or death.

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

W009

Nameplate Location

When calling or writing about your washer, PLEASE GIVE THE MODEL AND SERIAL NUMBERS. The model and serial numbers are located on the nameplate. The nameplate will be in the location shown.



Model Identification

The information in this manual is applicable to these washers.

Washer Models	Electronic Models	Timer Models	One-Speed Motor	Two-Speed Motor	Porcelain Washtub (Cubic Foot)	Stainless Steel Washtub (Cubic Foot)
AWM270-3062		X	X		2.7	
AWM292-2200		X	X		3.0	
AWM293-2200		X	X			3.0
AWM372-3062		X	X		3.0	
KWM372-1109		X	X		3.0	
AWM372-3059		X	X		3.0	
AWM373-3062		X	X			3.0
KWM373-1109		X	X			3.0

Washer Models	Electronic Models	Timer Models	One-Speed Motor	Two-Speed Motor	Porcelain Washtub (Cubic Foot)	Stainless Steel Washtub (Cubic Foot)
ZWM373-3059		X	X			3.0
AWM392-1000		X	X		3.0	
AWM392-2200		X	X		3.0	
AWM392-3000		X	X		3.0	
AWM392-3300		X	X		3.0	
UWM392-1102		X	X		3.0	
PA9392-2200		X	X		3.0	
AWM393-1000		X	X			3.0
AWM393-2200		X	X			3.0
AWM393-3000		X	X			3.0
AWM393-3050		X	X			3.0
AWM393-3300		X	X			3.0
AWM393-3059		X	X			3.0
PA9393-2200		X	X			3.0
KWM472-1109		X		X	3.0	
KWM573-1109		X		X		3.0
AWM593-2200		X		X		3.0
UWM593-1102		X		X		3.0
KAW693-3050		X		X		3.0
PA9693-2200		X		X		3.0
UWE993-1102	X		X			3.0

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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.

WOC3

1. WALL RECEPTACLE POLARITY CHECK, *Figure 1.*

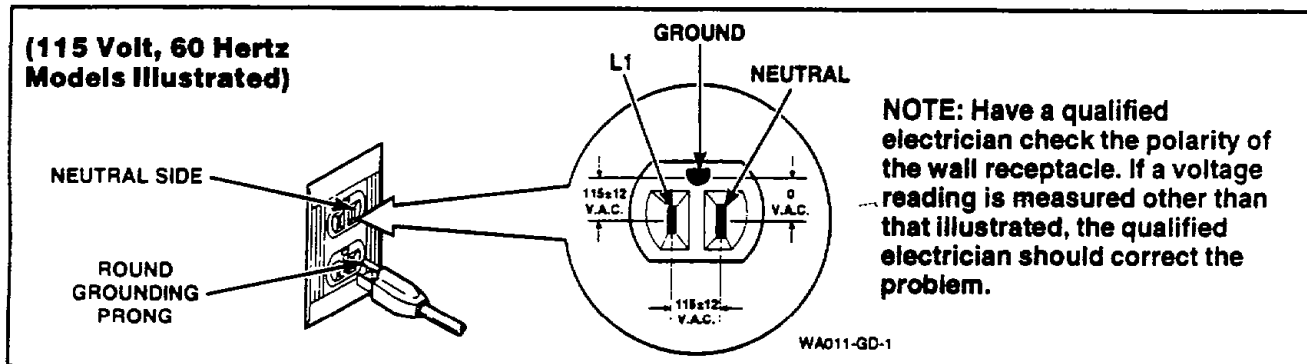


Figure 1

2. POWER CORD TO CABINET TOP, CABINET TOP TO CONTROL HOOD MOUNTING BRACKET, PRESSURE SWITCH MOUNTING BRACKET AND GROUND TAB ON GRAPHIC PANEL, *Figure 2.*

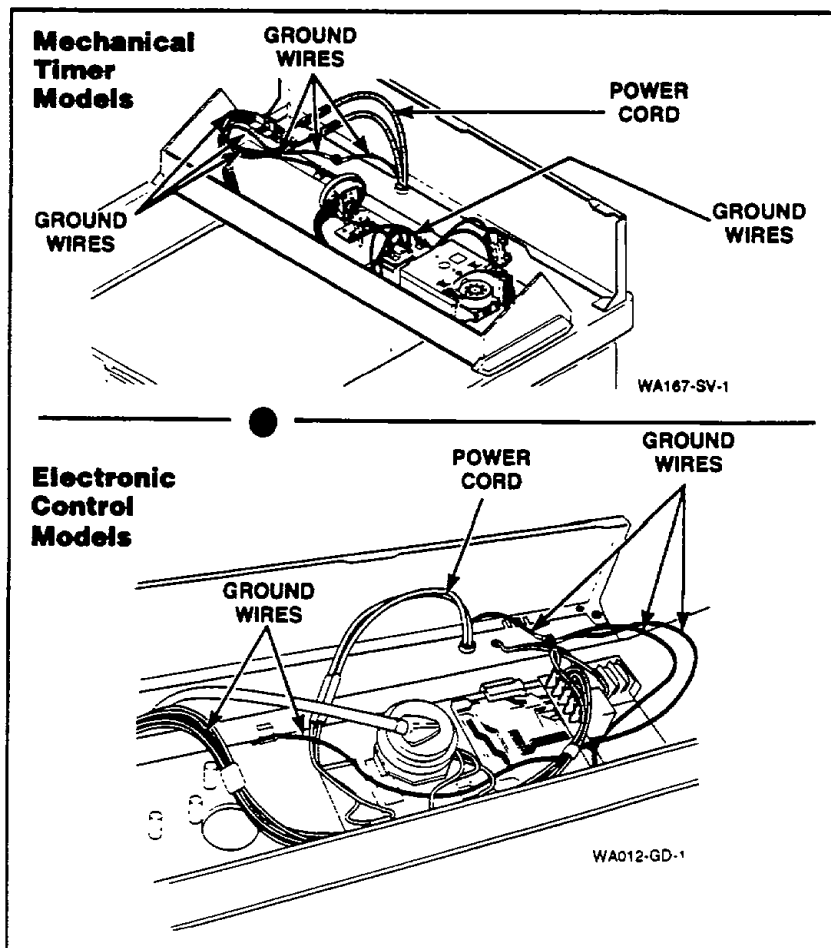


Figure 2

▲ 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.

W002

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

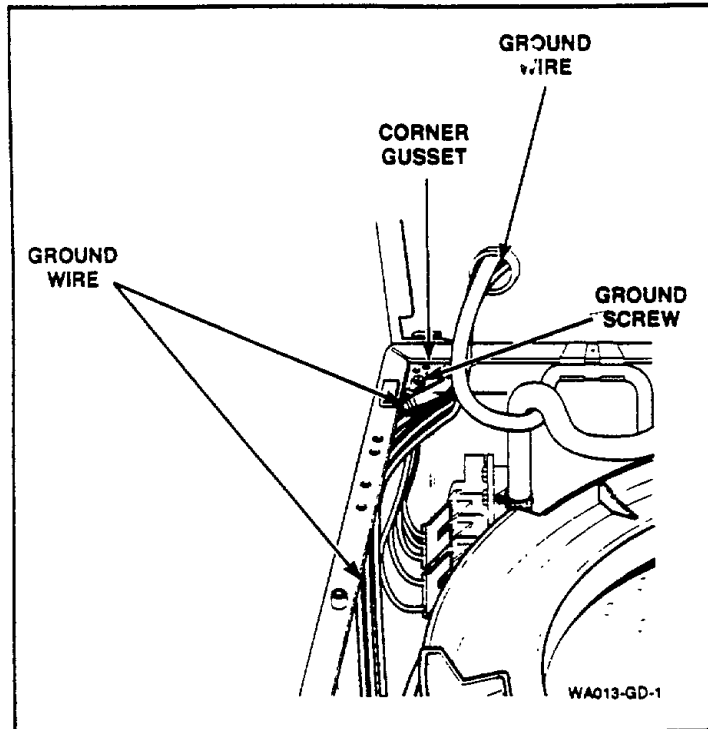


Figure 3

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

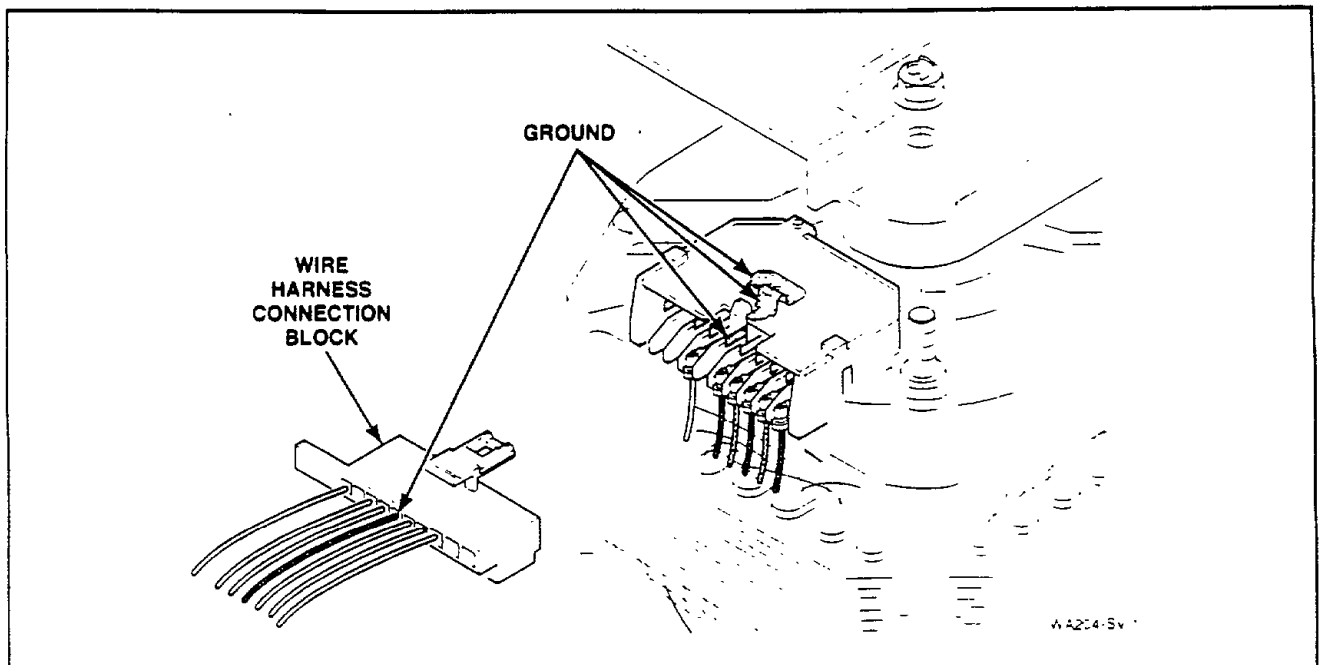


Figure 4

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

To reduce the risk of an electric shock, disconnect electrical power and close water supply valves before servicing washer.

To reduce the risk of serious personal injury, never energize the electrical power to the washer with any guards/panels removed.

Do not repair or replace any part of the washer or attempt any servicing unless specifically recommended in the User-Maintenance Instructions or in published user-repair instructions 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 washer is properly grounded and to reduce the risk of fire, electric shock, severe personal injury or death.

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.

▲ WARNING

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

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

W003

5. CONTROL HOOD ASSEMBLY

(Figures 5 through 10)

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

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

TO REMOVE CONTROL HOOD END CAPS

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

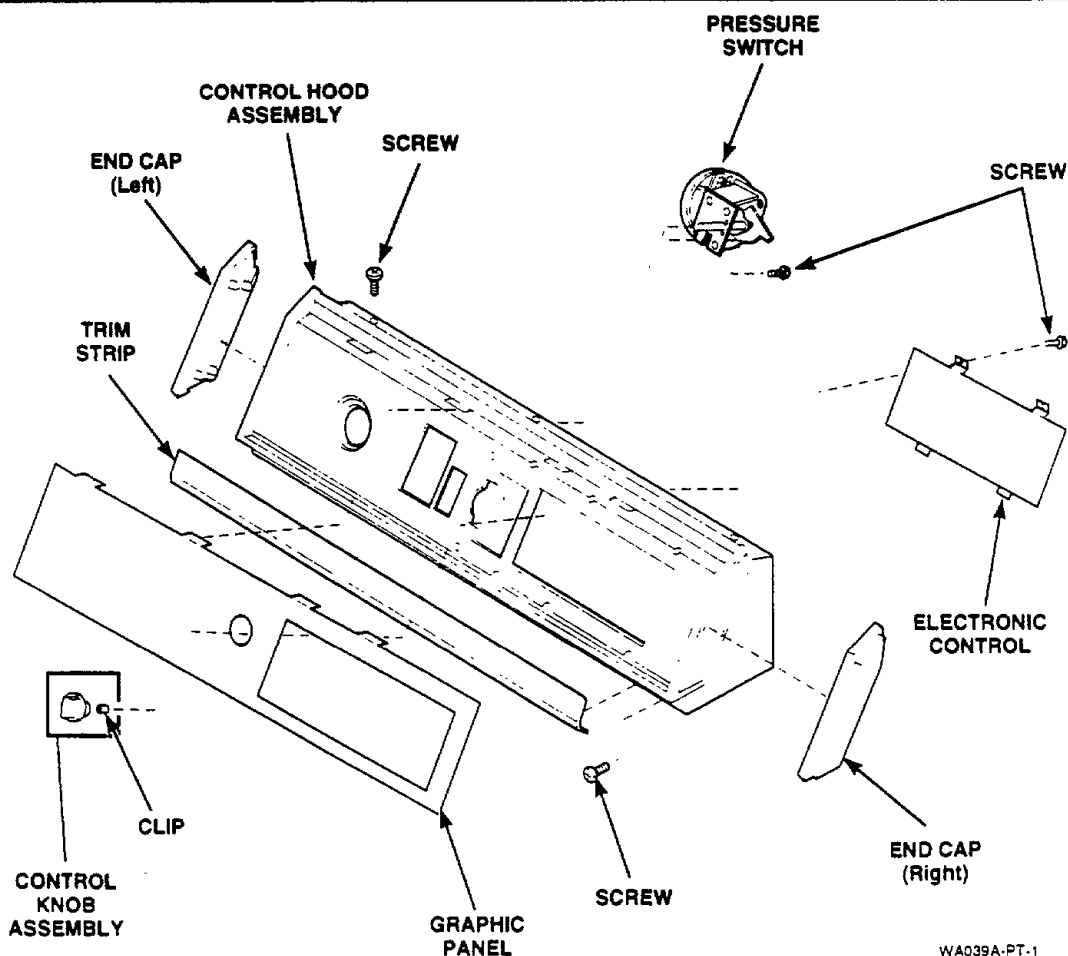
6. ELECTRONIC CONTROL

(Refer to Figure 5)

IMPORTANT: When removing or installing an electronic control, handle the control by the edges to prevent damage to the control.

- Remove six screws (3 on top and 3 at lower front) holding rear of hood assembly to the control hood rear panel and cabinet top.
- Disconnect wires from the electronic control carefully remove control from control hood assembly.

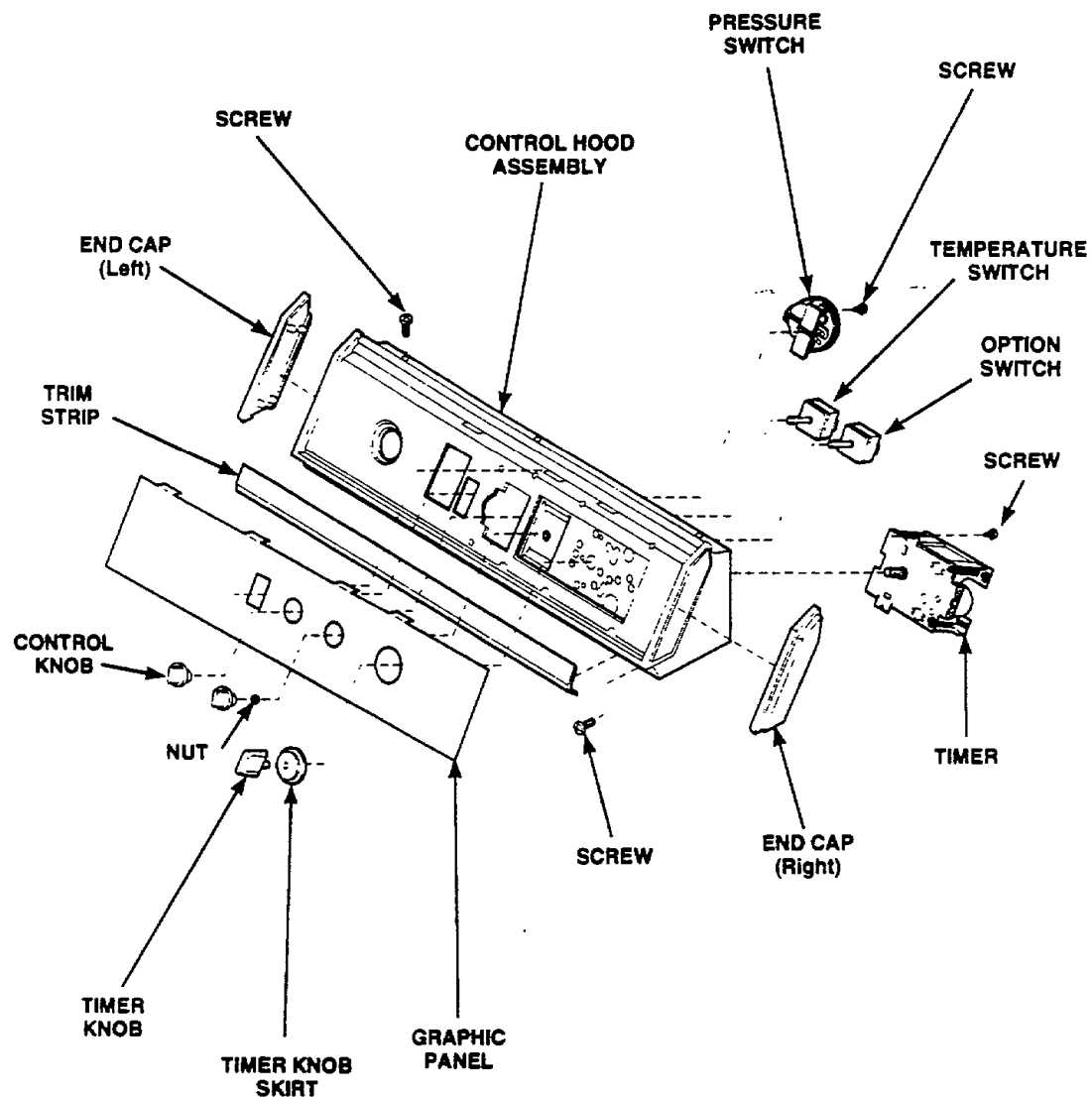
NOTE: Refer to the appropriate wiring diagram when rewiring the electronic control.



WA039A-PT-1

**GRAPHIC PANEL, CONTROL HOOD AND CONTROLS
(Model UWE993-1102)**

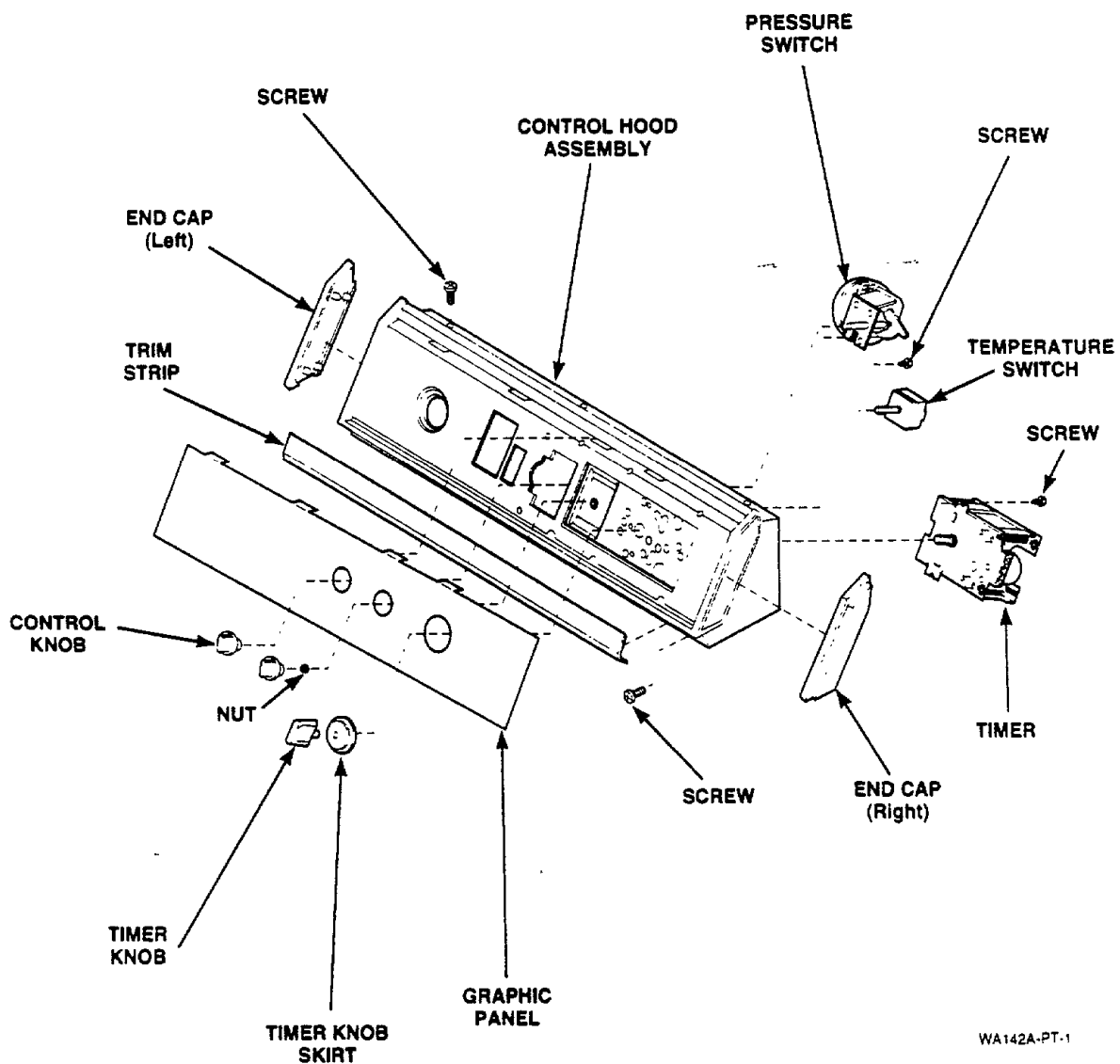
Figure 5



WA143A-PT-1

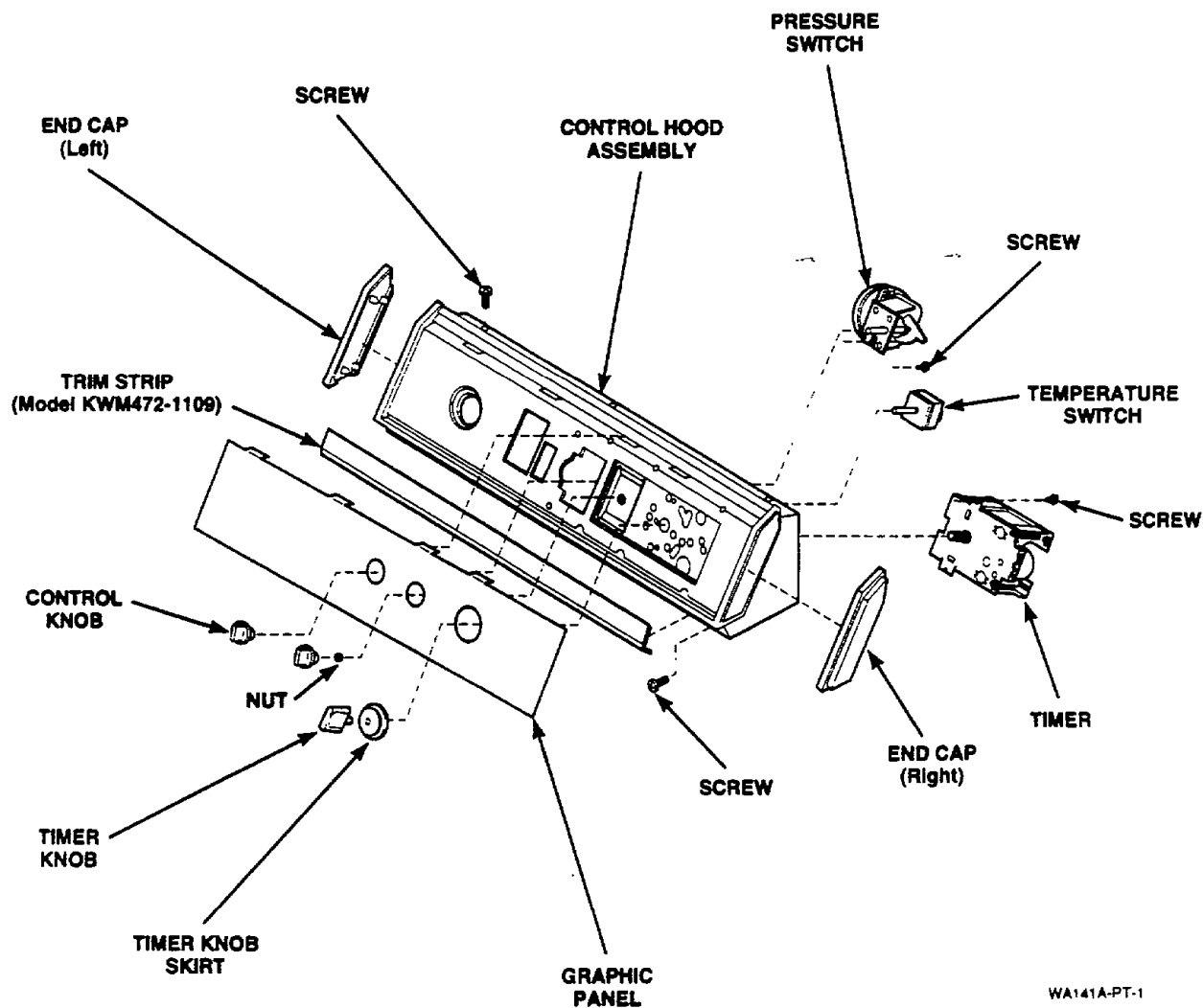
GRAPHIC PANEL, CONTROL HOOD AND CONTROLS
(Models KAW693-3050 and PA9693-2200)

Figure 6



GRAPHIC PANEL, CONTROL HOOD AND CONTROLS
(Models KWM573-1109, AWM593-2200 and UWM593-1102)

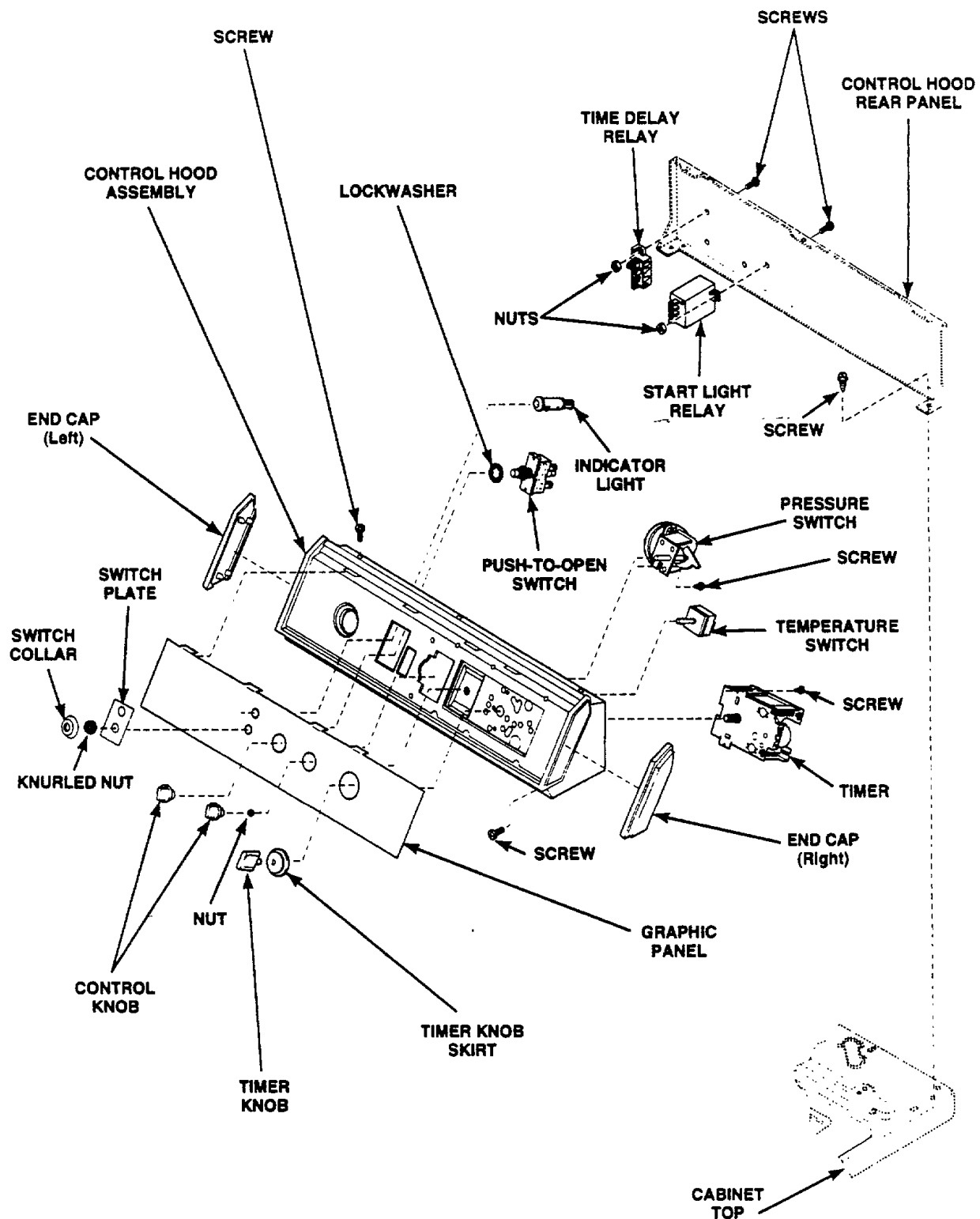
Figure 7



WA141A-PT-1

GRAPHIC PANEL, CONTROL HOOD AND CONTROLS
 (Models AWM392-1000, AWM392-2200, AWM392-3000, AWM392-3300,
 UWM392-1102, PA9392-2200, AWM393-1000, AWM393-2200, AWM393-3000,
 AWM393-3050, AWM393-3300, PA9393-2200 and KWM472-1109)

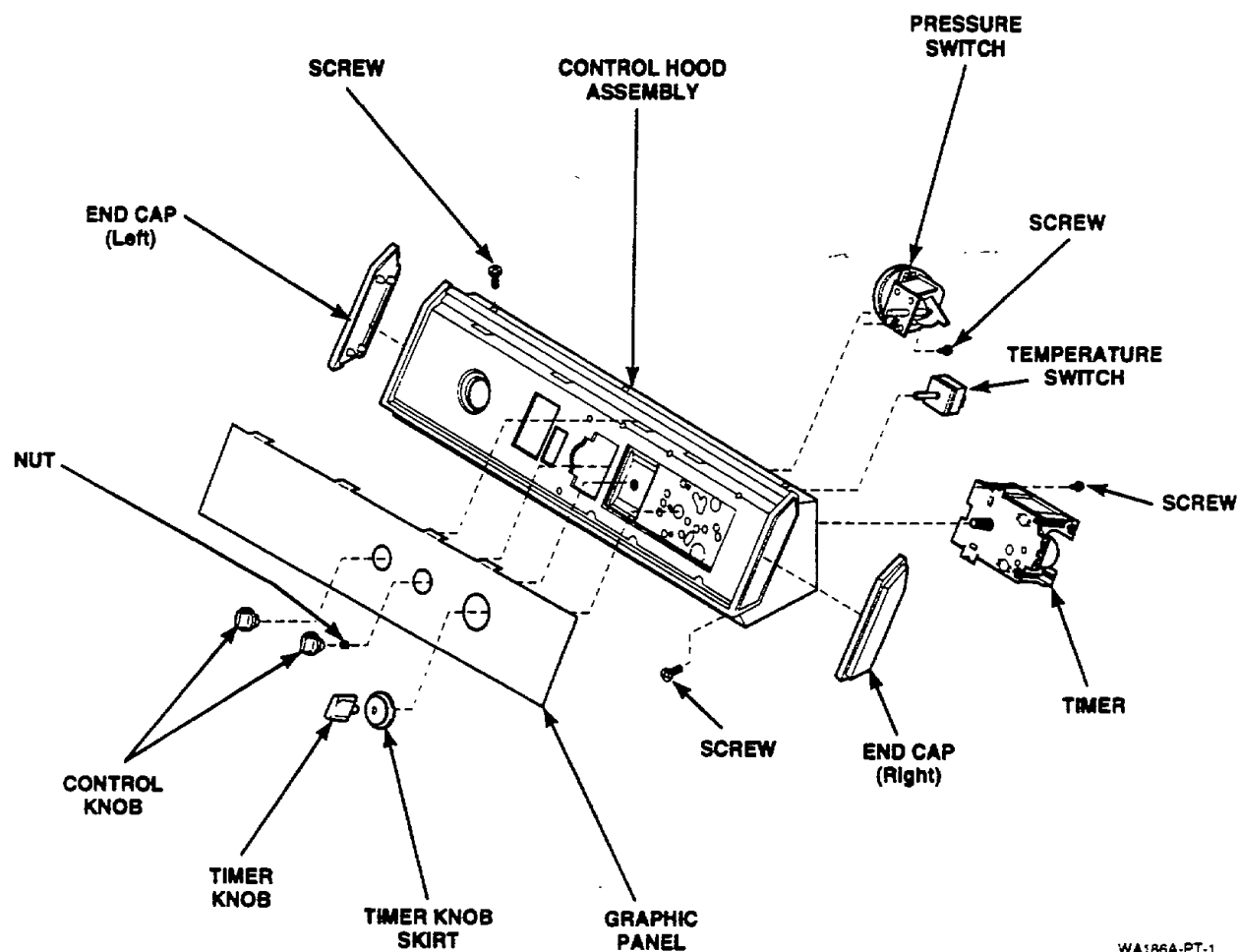
Figure 8



WA187A-PT-1

GRAPHIC PANEL, CONTROL HOOD AND CONTROLS
 (Models ZWM372-3059, ZWM373-3059 and AWM393-3059)

Figure 9



WA186A-PT-1

GRAPHIC PANEL, CONTROL HOOD AND CONTROLS
 (Models AWM270-3062, AWM292-2200, AWM293-2200, AWM372-3062,
 KWM372-1109, AWM373-3062 and KWM373-1109)

Figure 10

▲ WARNING

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

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

W002

7. TIMER (Refer to Figures 6 through 10)

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

- Pivot hood assembly forward on cabinet top.
- Remove two screws holding timer to control hood mounting plate, *Figure 11*.

NOTE: DO NOT attempt to repair the timer.

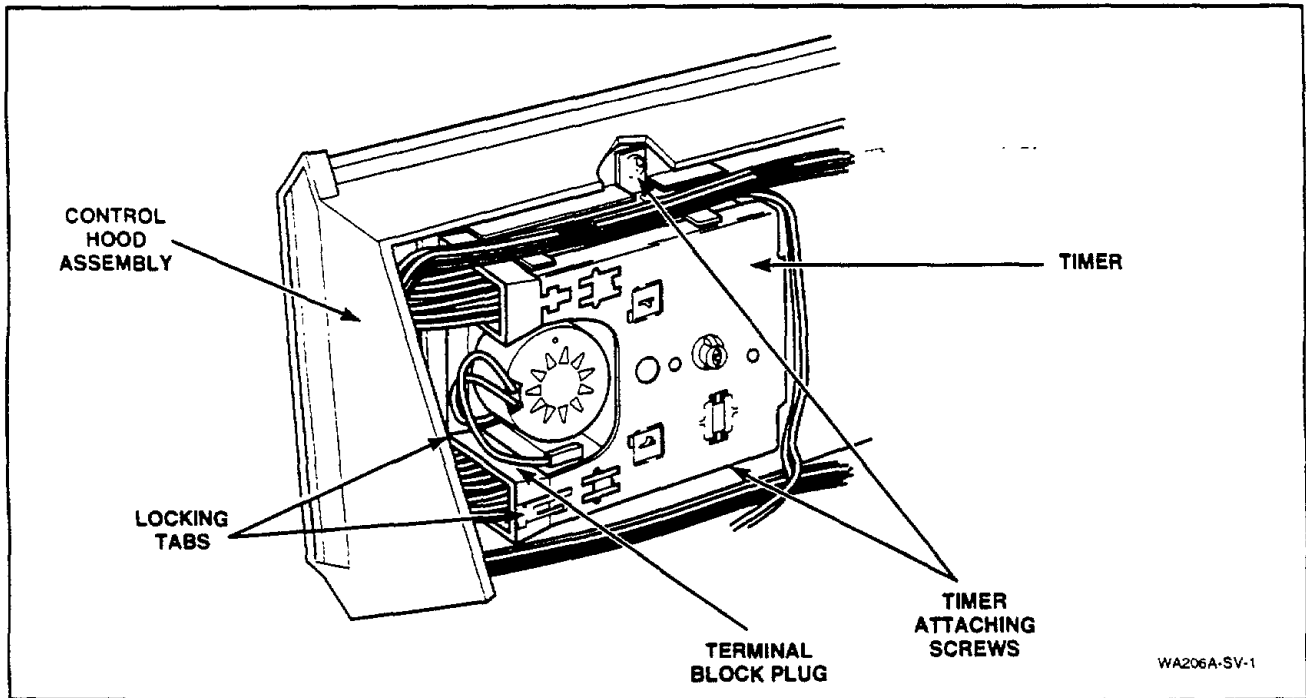


Figure 11

(cont)

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

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

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

NOTE: When installing timer, be sure timer is installed correctly and is securely mounted to bracket on control hood, *Figure 12*.

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

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

8. TEMPERATURE SWITCH

- Remove six screws (3 on top and 3 at lower front) holding the hood assembly to the control hood rear panel and cabinet top.
- Pivot hood assembly forward on cabinet top.
- Disconnect wires from switch terminals.
- Refer to *Figures 6 through 10* for switch removal.

NOTE: Refer to appropriate wiring diagram when rewiring switch.

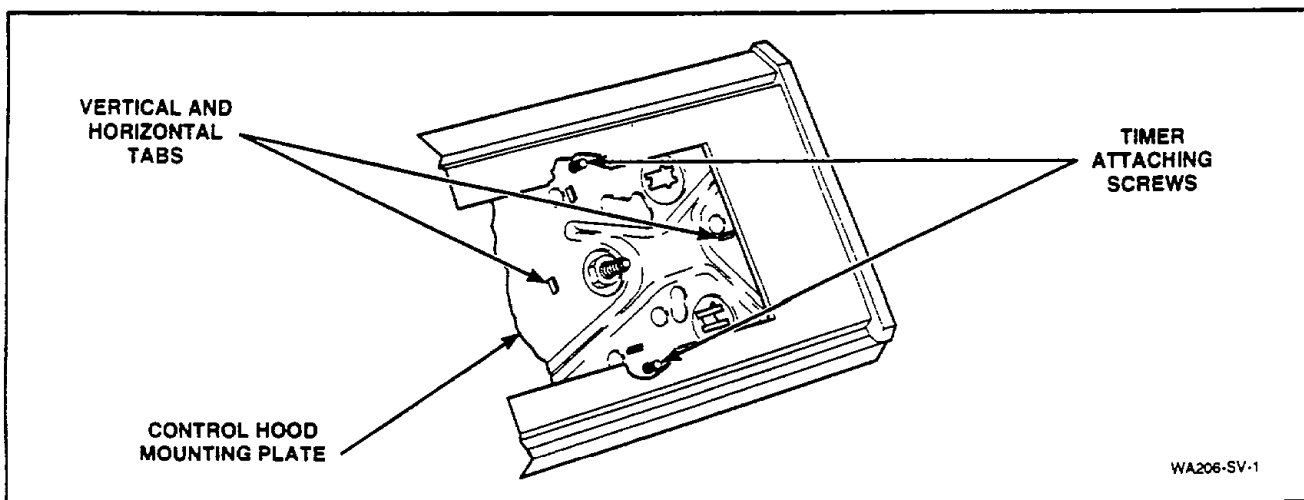


Figure 12

▲ 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

9. PRESSURE SWITCH

- Remove six screws (3 on top and 3 at lower front) holding the hood assembly to the control hood rear panel and cabinet top.
- Pivot hood assembly forward on cabinet top.
- Disconnect wires from pressure switch.
- Refer to *Figures 5 through 10* for switch removal.

NOTE: Refer to appropriate wiring diagram when rewiring switch.

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

10. GRAPHIC PANEL

(Refer to *Figures 5 through 10*)

- Unscrew timer knob from timer shaft (right hand thread), then remove the timer knob skirt.
- Pull knobs off switch shafts.
- Remove six screws (3 on top and 3 at lower front) holding the hood assembly to the control hood rear panel and cabinet top.
- Pivot hood assembly forward onto cabinet top.
- Disconnect the wires from the component parts and carefully remove the components from the control hood assembly.

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

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

11. LOADING DOOR

- Open loading door, *Figure 13*.
- Remove two screws holding left hinge to door and remove hinge and gasket, *Figure 13*.
- With loading door raised to the vertical position, swing left side of door toward front of washer, *Figure 14*, procedure one.
- Rotate door so door is upside down, *Figure 14*, procedure two.
- Carefully remove loading door, right hinge and bushing from cabinet top, *Figure 14*, procedure three.

NOTE: Reverse procedure when installing the door.

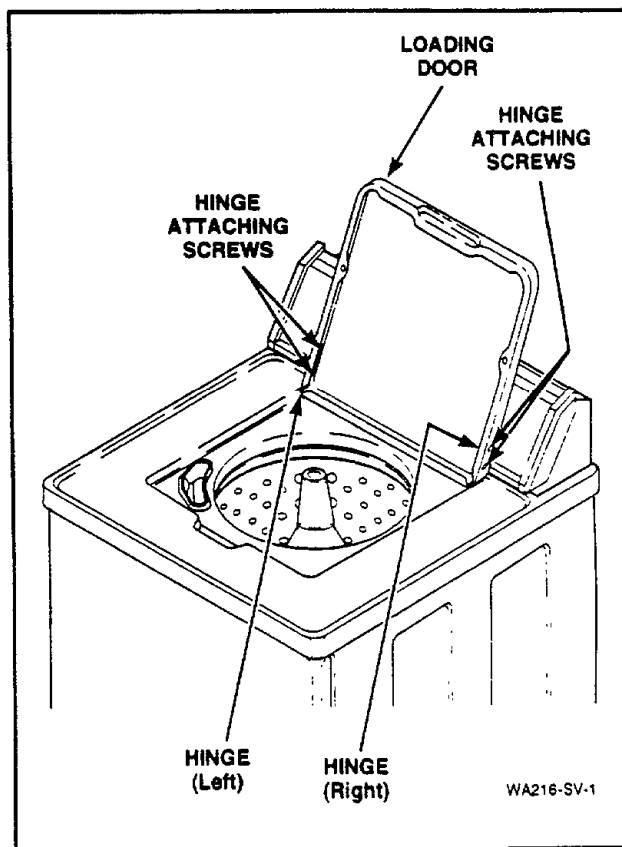


Figure 13

(continued)

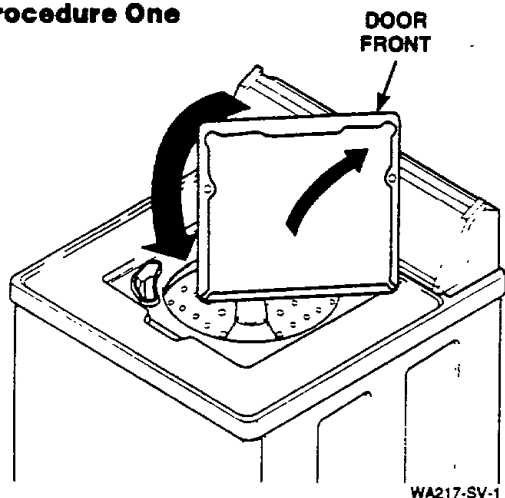
▲ WARNING

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

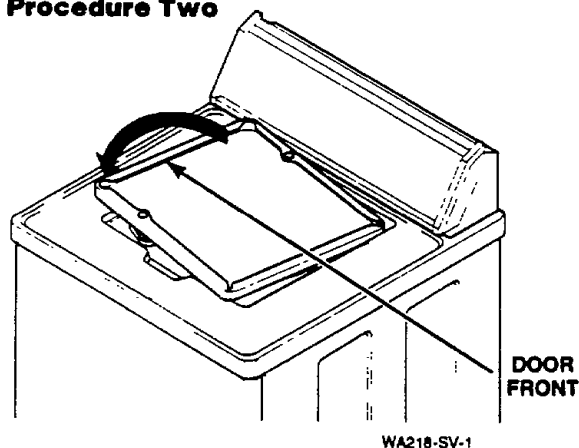
- Disconnect electric power to the washer before servicing.
- Never start the washer with any guards/panels removed.
- Whenever ground wires are removed during servicing, these ground wires must be reconnected to ensure that the washer is properly grounded.

W003

Procedure One



Procedure Two



Procedure Three

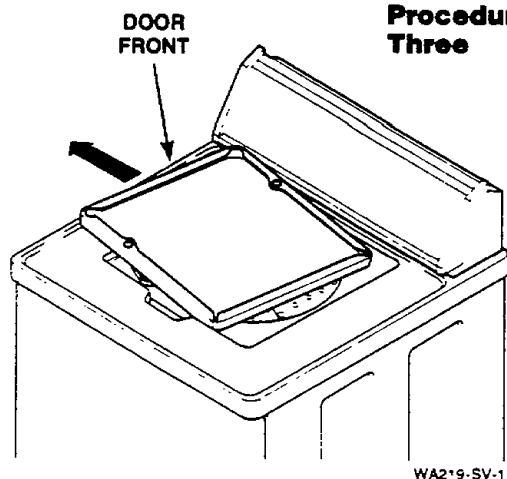


Figure 14

12. AGITATOR

- Open loading door.
- To remove the agitator by hand, place two agitator hooks, No. 254P4P, under the bottom edge of the agitator, *Figure 15*.

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

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

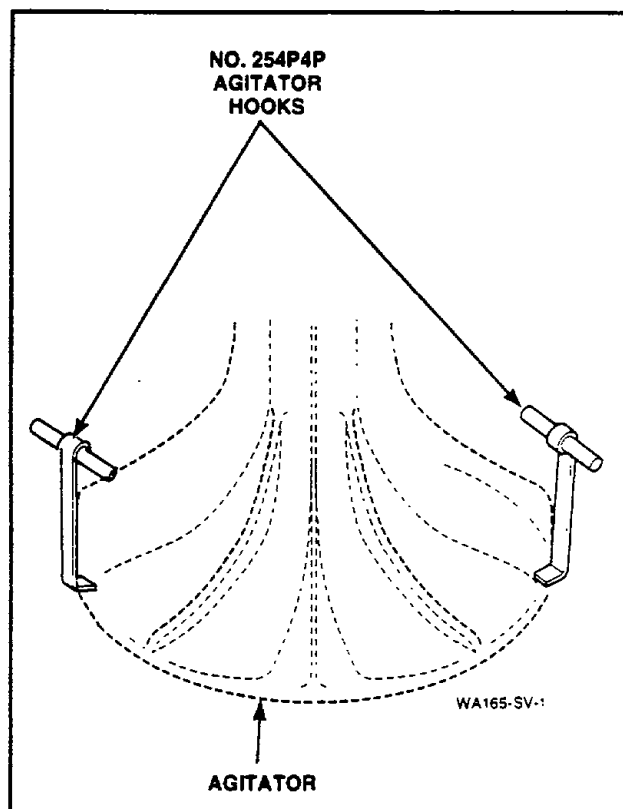


Figure 15

▲ WARNING

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

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

W003

13. AGITATOR DRIVE BELL AND SEAL ASSEMBLY

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

- Open loading door.
- To remove the agitator by hand, place two agitator hooks, No. 254P4P, under the bottom edge of the agitator, *Figure 15*.

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

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

NOTE: It may require using the No. 253P4 Drive Bell Tool to remove the drive bell from the transmission shaft, if not, proceed to step 1.

- Back the bolt out of the tool approximately three quarters of the way, *Figure 16*.
- Place the tool over the drive bell, making sure the indent on the jaws line up with the wide slots on the bell, *Figure 17*.
- Screw the bolt down through hole in top of bell until bolt bottoms out in the hole in shaft.
- Place the lip of each jaw under the bottom edge of the drive bell, making sure the indent on the jaws line up with the wide slots on the bell. Then tighten the two wing nuts to hold the jaws firmly against the drive bell, *Figure 17*.

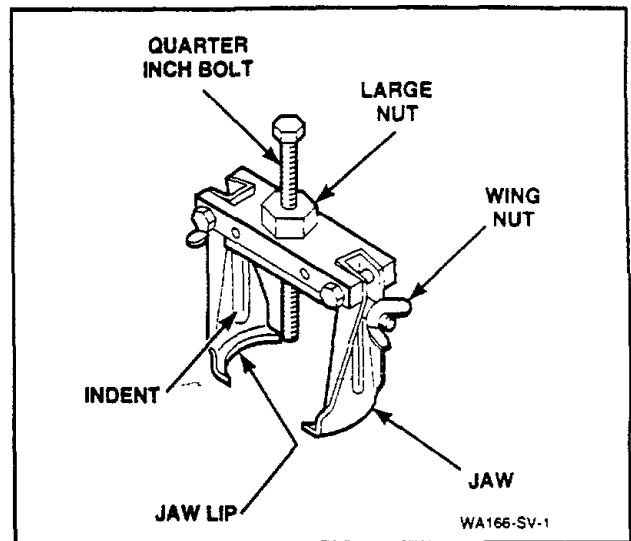


Figure 16

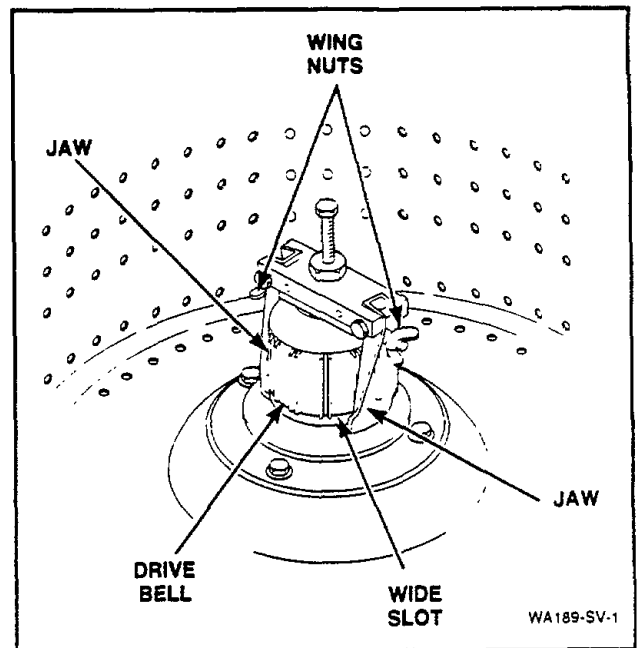


Figure 17

(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

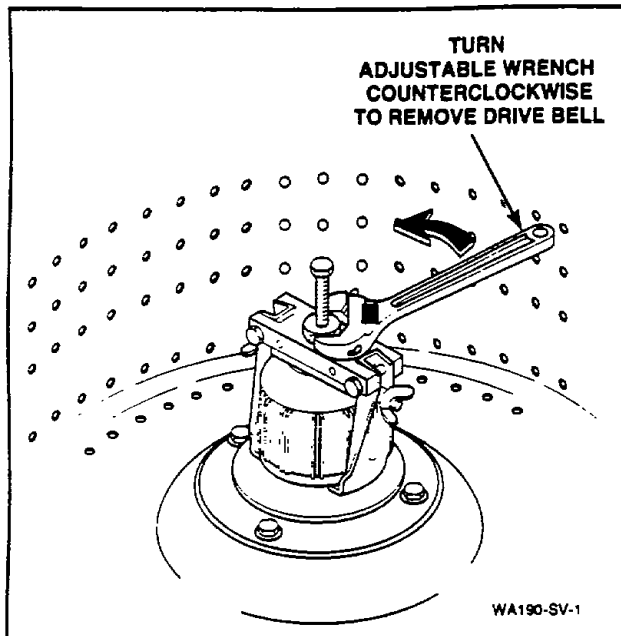


Figure 18

- i. Use an adjustable wrench, turn the large nut on the tool **COUNTERCLOCKWISE** to pull the drive bell from the transmission shaft, *Figure 18*.

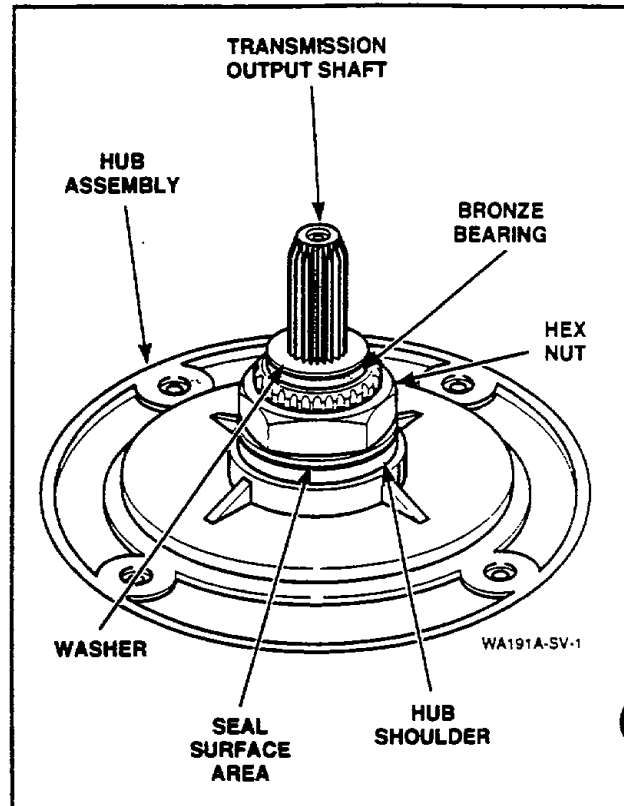


Figure 19

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

- j. Turn the 1/4 inch bolt out of the transmission shaft and remove the tool and drive bell from washer.
- k. Loosen the two wing nuts and remove the drive bell from the tool.
- l. Remove old seal from hub by placing a flat blade screwdriver between bottom edge of seal and the hub using the washtub bolts as a pry area to pop off the lower seal bead. Then grasp the seal and pull straight up freeing the upper seal bead.
- m. Thoroughly clean any foreign material from the seal surface area of the hub and bronze bearing, *Figure 19*.
- n. Lubricate the new seal with liquid soap or soapy water to aid in assembling the seal onto the hub.
- o. Place the new drive bell seal on hub, *Figure 20*, and carefully push the seal into position using the large end of the No. 274P4 Seal Tool, *Figure 21*.

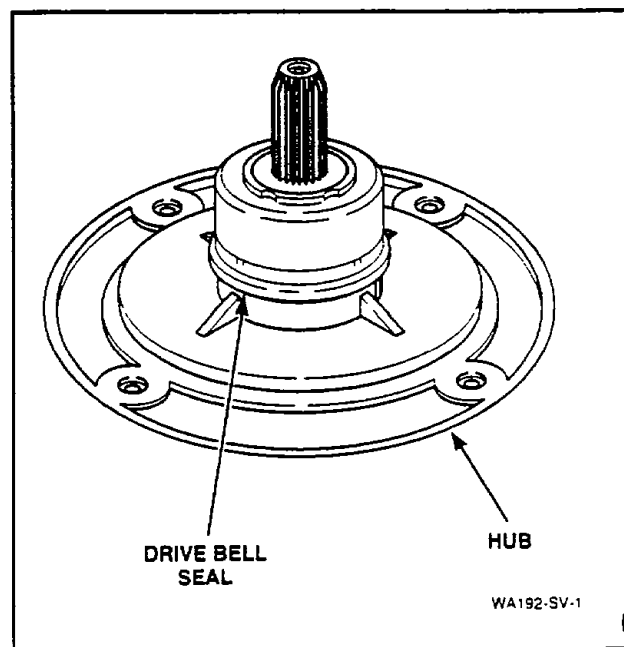


Figure 20

▲ 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

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

- Turn the seal tool upside-down and place the small end over the output shaft and onto the washer, *Figure 22*.
- Push down on tool with a quick motion until tool bottoms out and the top of seal is fully seated, *Figure 22*.

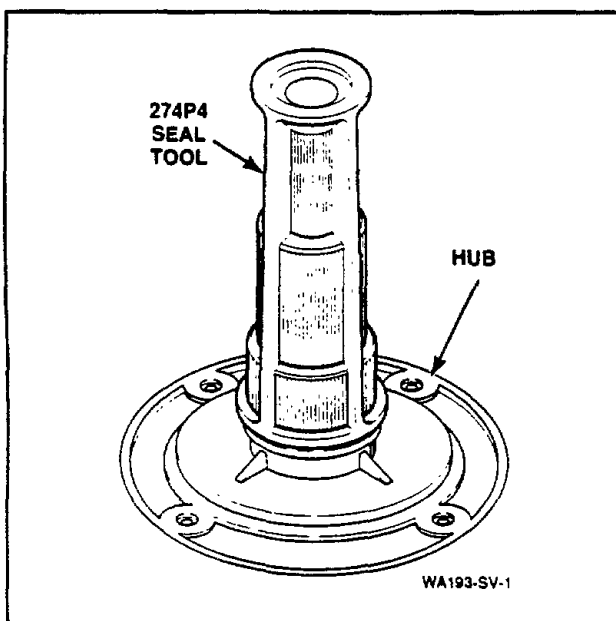


Figure 21

TO REINSTALL NEW DRIVE BELL

- Position new drive bell over transmission shaft. Rotate drive bell until splines in drive bell line up with splines on transmission shaft.
- Push drive bell down on transmission shaft.
- Place the new "O" Ring onto the new shoulder screw. Thread the new shoulder screw down through the hole in the top of the drive bell and into the transmission shaft. **DO NOT reuse the old screw and "O" ring.**

NOTE: Torque new shoulder screw to approximately 75 inch pounds.

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

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

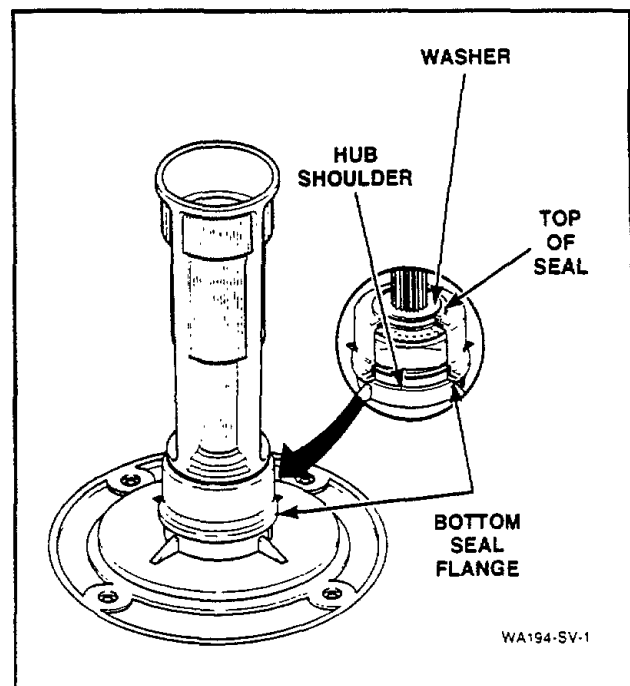


Figure 22

▲ 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

14. FRONT PANEL (Figure 23)

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

Guide Lugs

Remove the screws holding the guide lugs to the side flanges of the 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.

15. MOTOR AND MOUNTING BRACKET (Washer's with direct drive pump)

- Remove two screws from bottom edge of front panel, Figure 23.
- 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 the outer tub, therefore, before removing hoses from the pump, the hoses must be pinched off or drained to prevent water spillage on the floor.

- Loosen hose clamps and remove hoses from pump assembly, Figure 24.
- Unhook the idler spring from the clip on front of the motor mounting bracket, Figure 24.

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

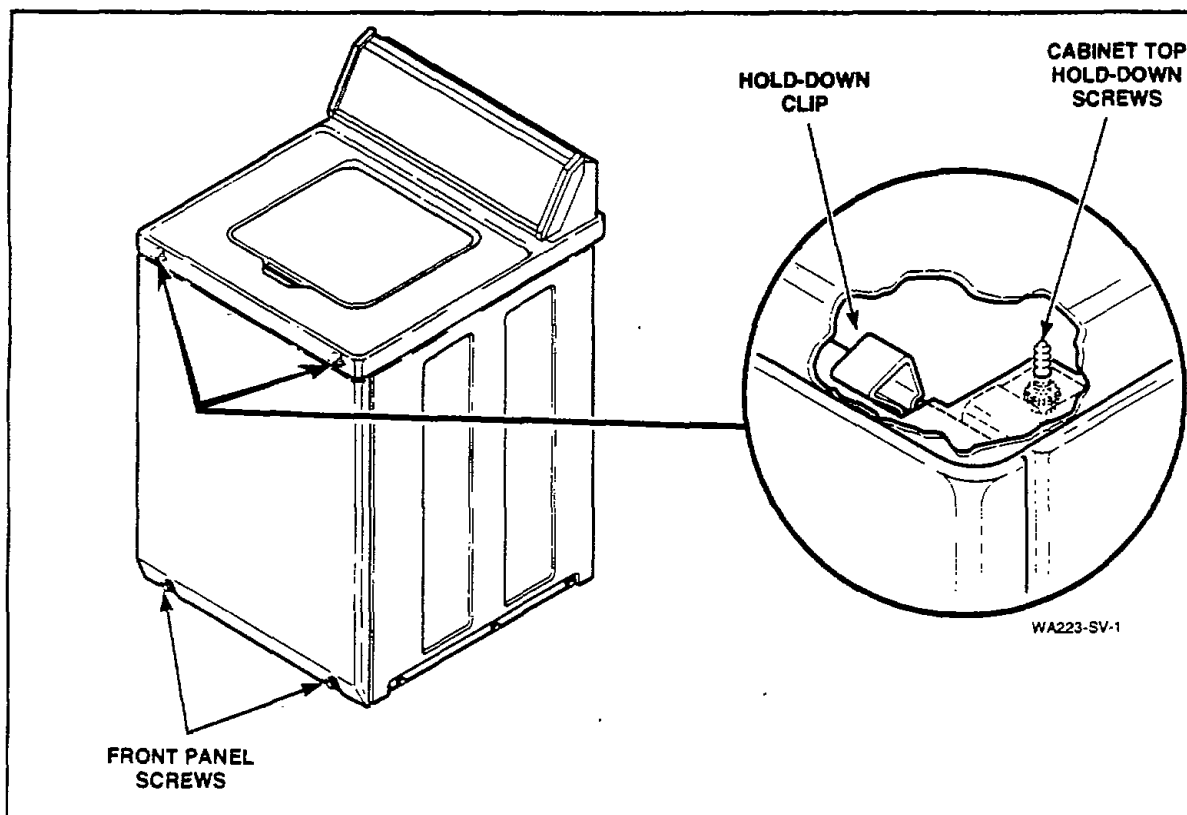


Figure 23

▲ 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

- Reach in and around right side of motor and run belt off right side of large drive pulley, *Figure 24*.
- 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 25*.
- Remove four screws holding motor and mounting bracket to washer base, *Figure 25*, then lift complete assembly out of washer.

IMPORTANT: Carefully lay motor on its side. Observe the belt configuration around rear pump leg. The belt **MUST** encircle rear pump leg when reassembling, *Figure 26*.

PUMP AND BELT REMOVAL

- Use the No. 291P4 Allen Wrench, remove three 1/8 inch allen head screws holding pump assembly to motor, *Figure 26*.

REASSEMBLY OF PUMP AND BELT

IMPORTANT: Install pump and belt together. Drive belt **MUST** be replaced with belt special clutch-type belt for proper washer operation.

- Align pump impeller hub with motor shaft. Make sure the belt encircles the rear pump leg, *Figure 26*.
- Use the No. 291P4 Allen Wrench and tighten the three 1/8 inch allen head screws to 35 inch pounds max. **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 the washtub so water will get into the pump so on start up you are not running on dry seals — which could ruin the seals.

MOTOR REMOVAL

Remove nuts, steel washers, spacers and rubber mounts holding motor to mounting bracket, *Figure 27*. 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 27* for motor and mounting bracket assembly sequence.

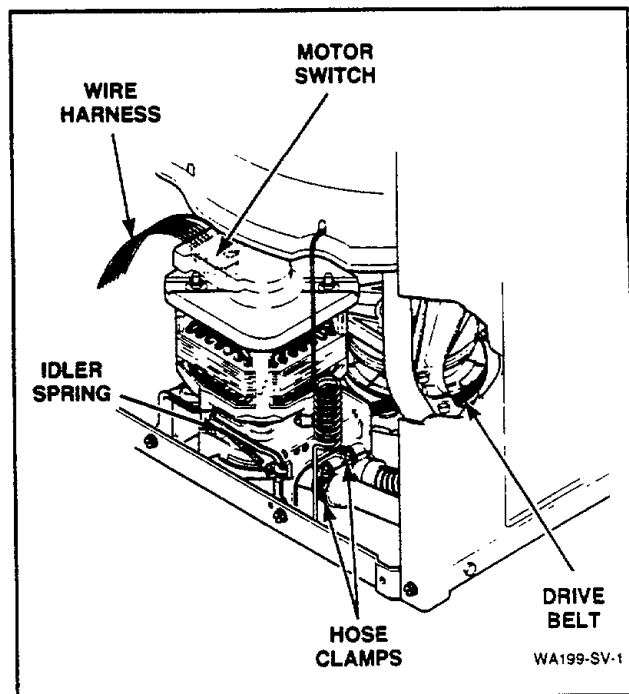


Figure 24

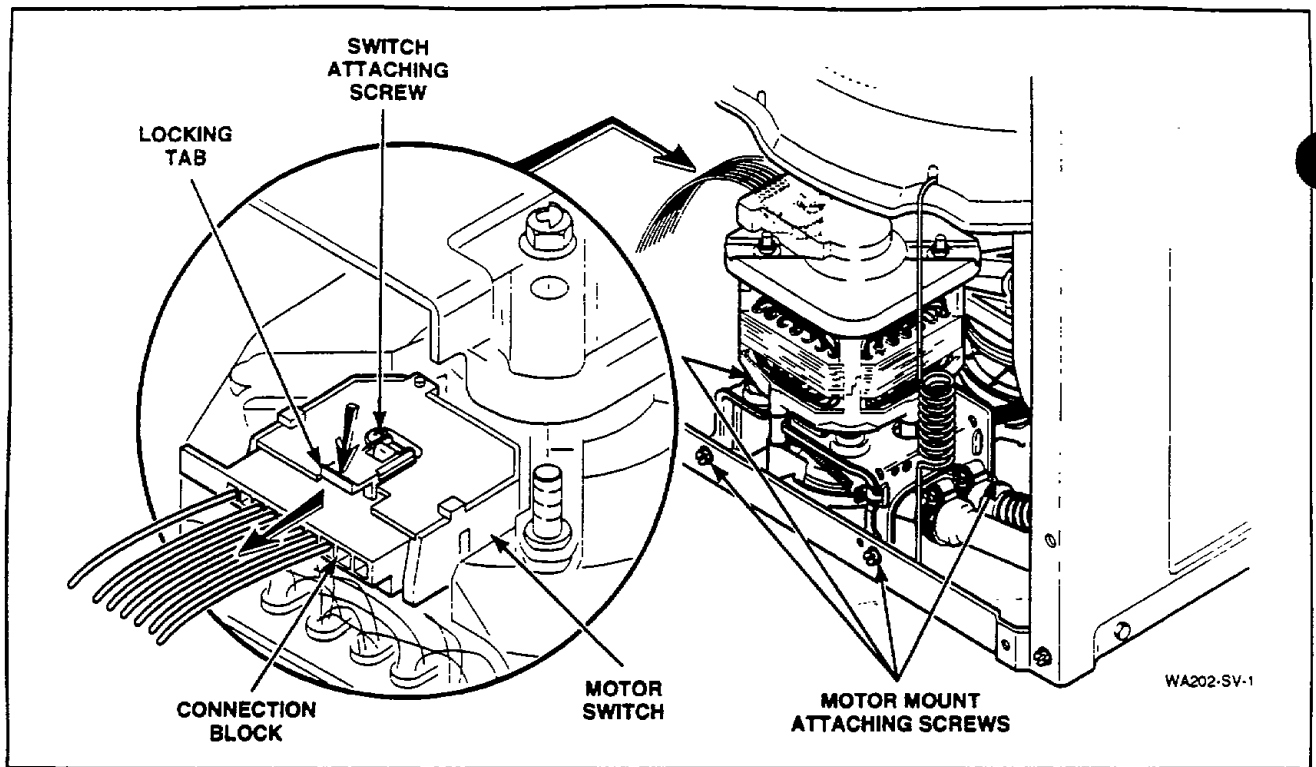


Figure 25

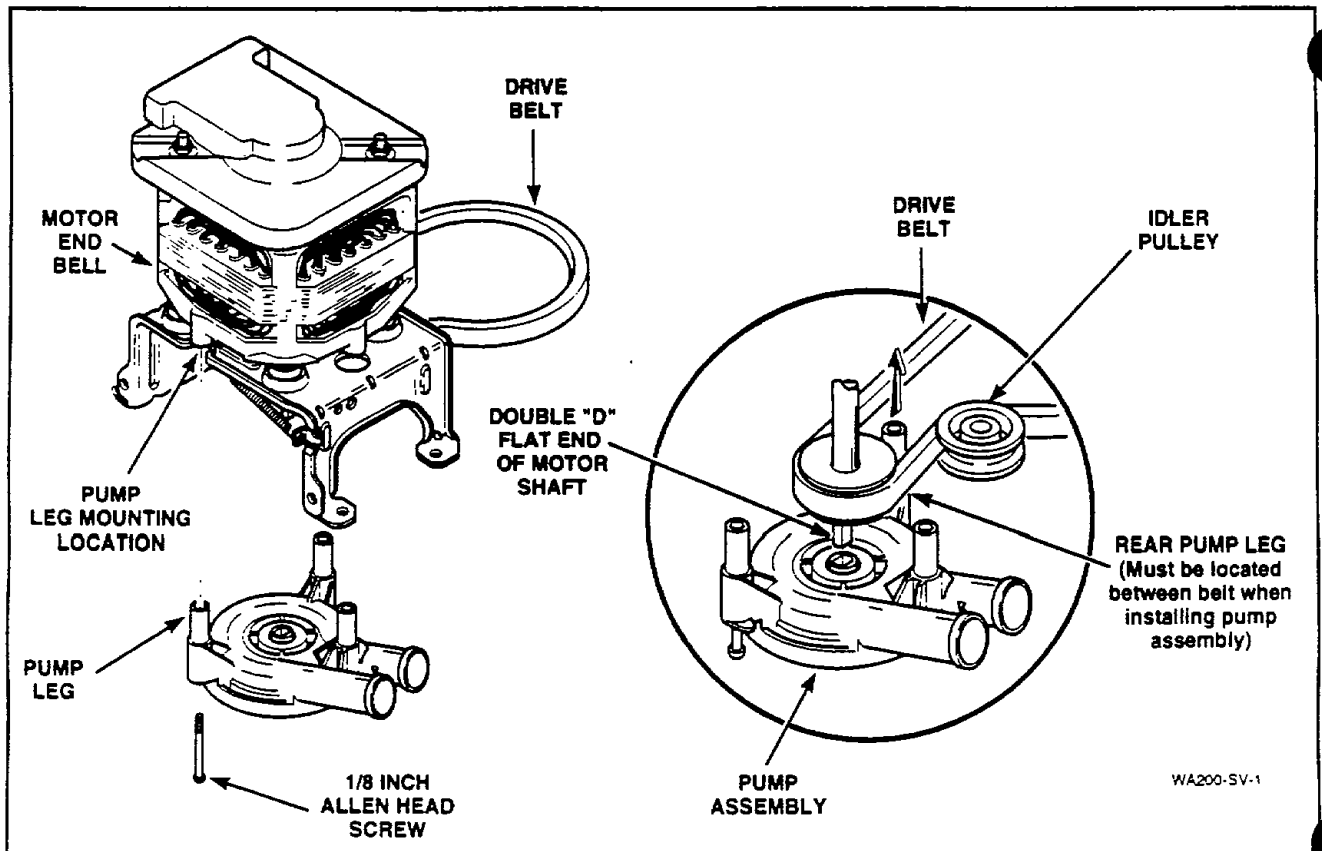


Figure 26

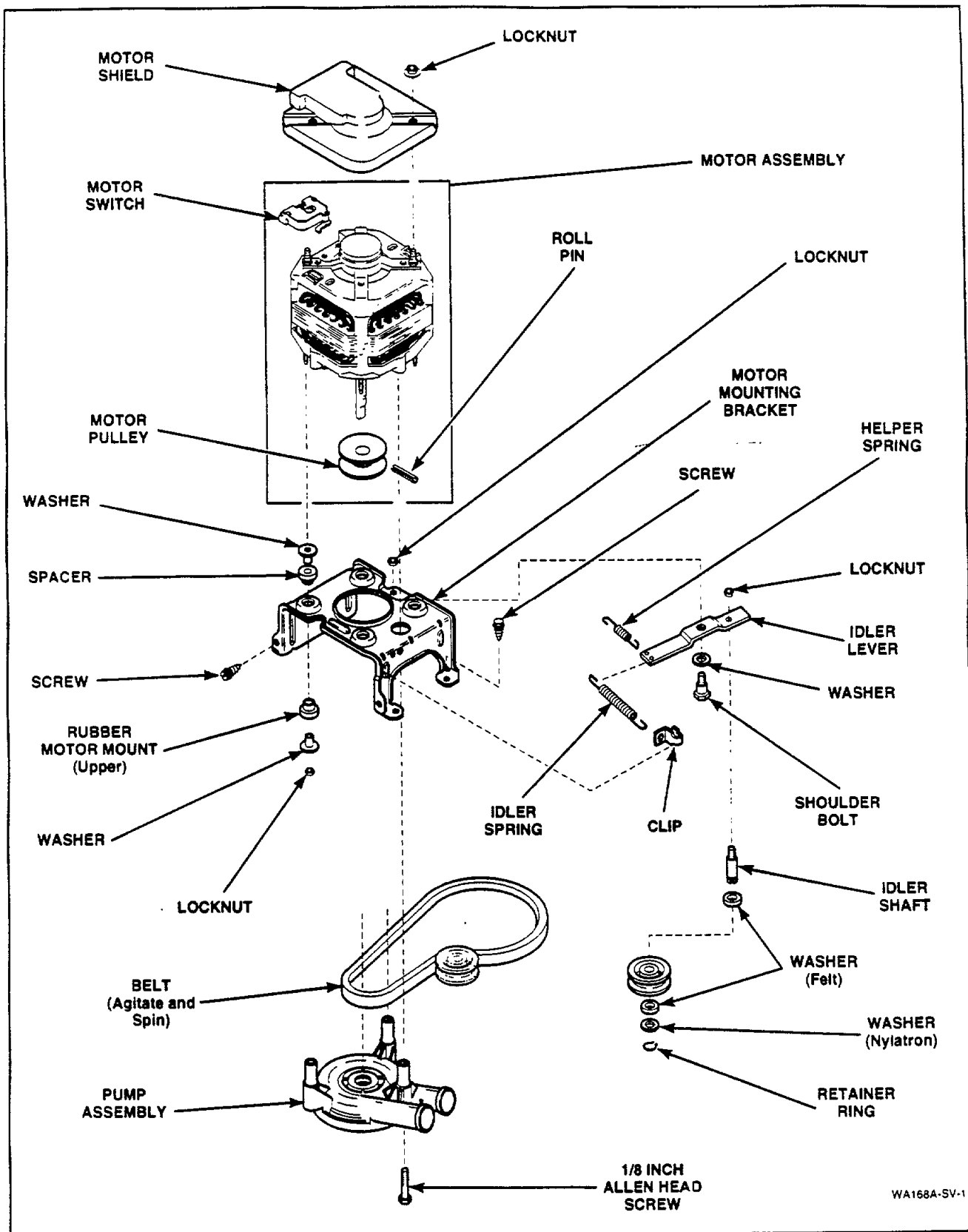


Figure 27

▲ 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.

W001

16. MOTOR AND MOUNTING BRACKET (Washer's with belt driven pump)

- Remove two screws from bottom edge of front panel, *Figure 23*.
- Pull bottom of panel away from washer until hold-down clips (located on top flange of panel) disengage from slots in cabinet top.
- Remove the front mounting screw and loosen the rear mounting screw holding the pump and the bracket to the washer base, *Figure 28*. Pivot entire assembly toward motor to loosen belt tension.
- Run belt off motor pulley, then remove belt from pump pulley.

NOTE: After installing the pump belt, adjust belt, paragraph 41.

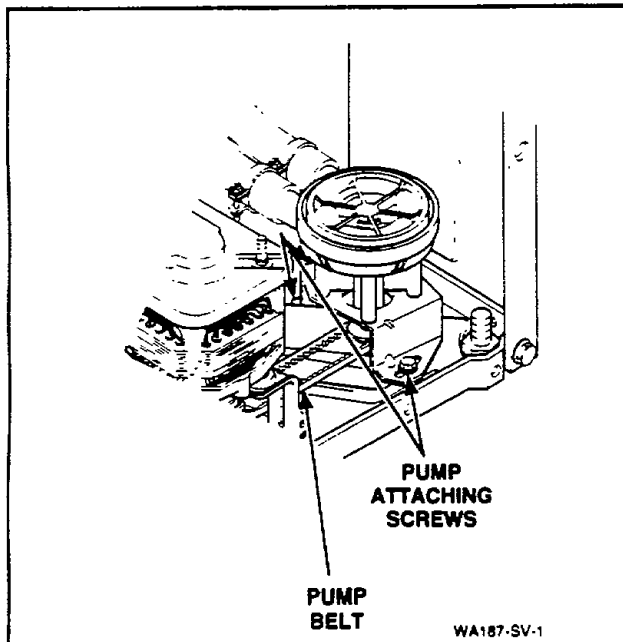


Figure 28

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

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

- While holding the idler lever, reach in and around the right side of the motor and run the belt off the right side of the large drive pulley, *Figure 29*.
- Remove belt from motor pulley and pull belt out through front of motor mount.

IMPORTANT: Drive belt **MUST** be replaced with special clutch-type belt for proper washer operation.

MOTOR REMOVAL

Remove nuts, steel washers, spacers and rubber mounts holding motor to mounting bracket, *Figure 30*. 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 30* for motor and mounting bracket assembly sequence.

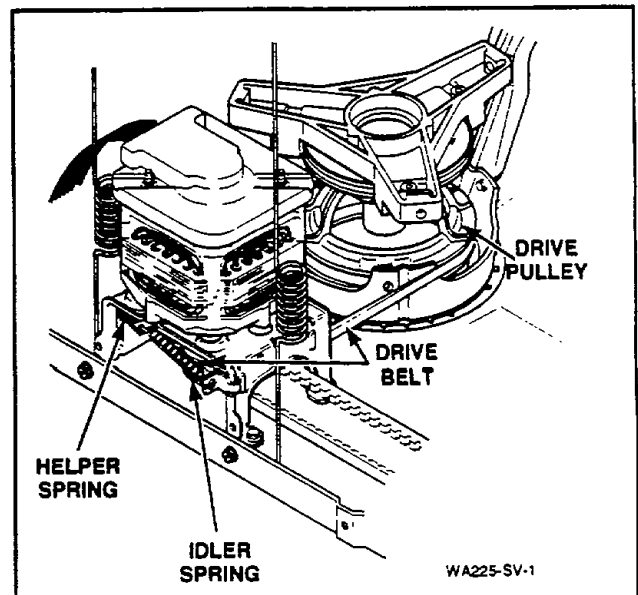


Figure 29

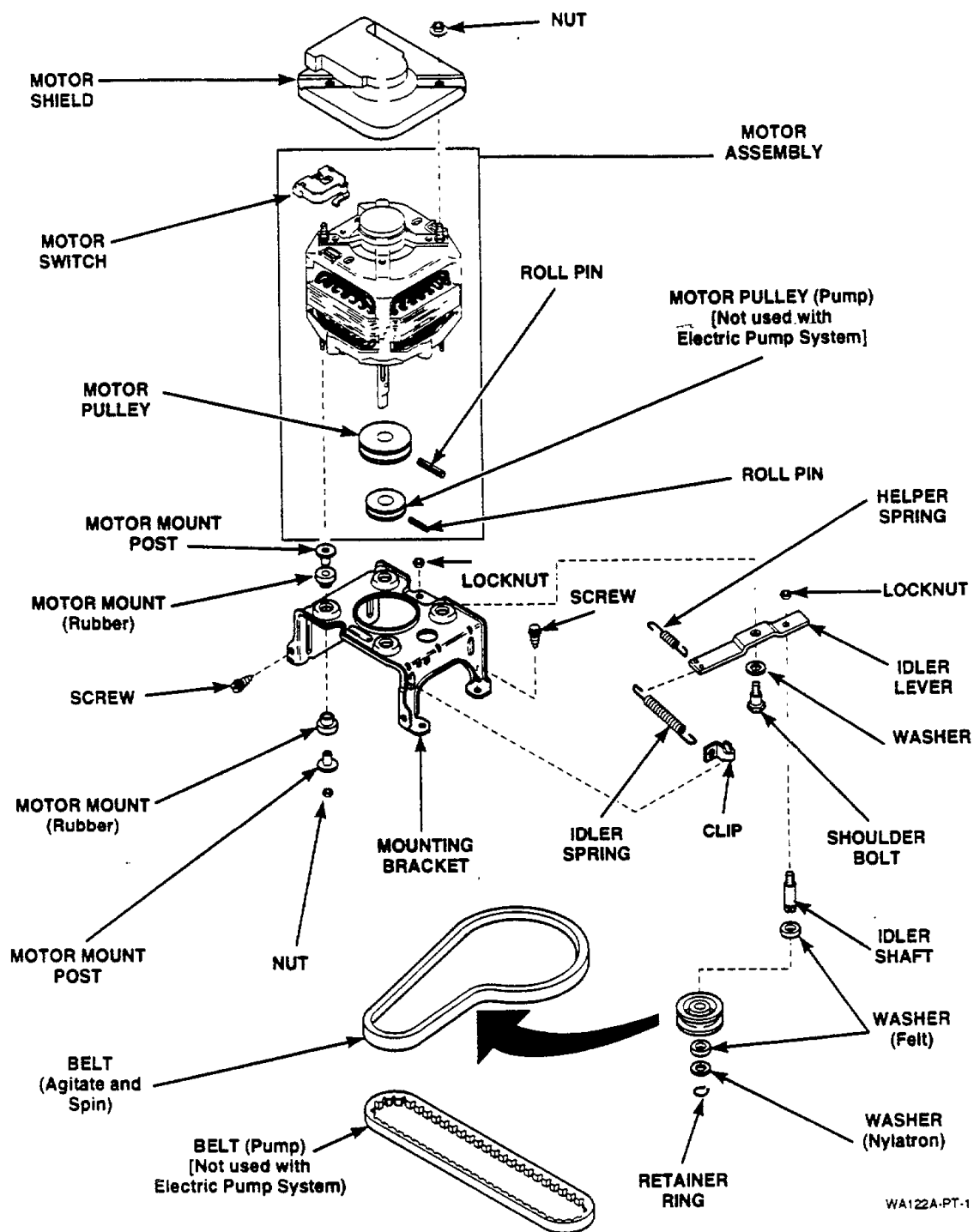


Figure 30

▲ WARNING

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

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

W002

**17. MOTOR AND MOUNTING BRACKET
(Washers with Electric Pump System)**

- Remove two screws from bottom edge of front panel, *Figure 23*.
- Pull bottom of panel away from washer until hold-down clips (located on top flange of panel) disengage from slots in cabinet top.
- Unhook the idler spring from the clip on front of the motor mounting bracket, *Figure 31*.

IMPORTANT: Use care when releasing the idler lever tension. If the 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 31*.

IMPORTANT: Drive belt **MUST** be replaced with special clutch-type belt for proper washer operation.

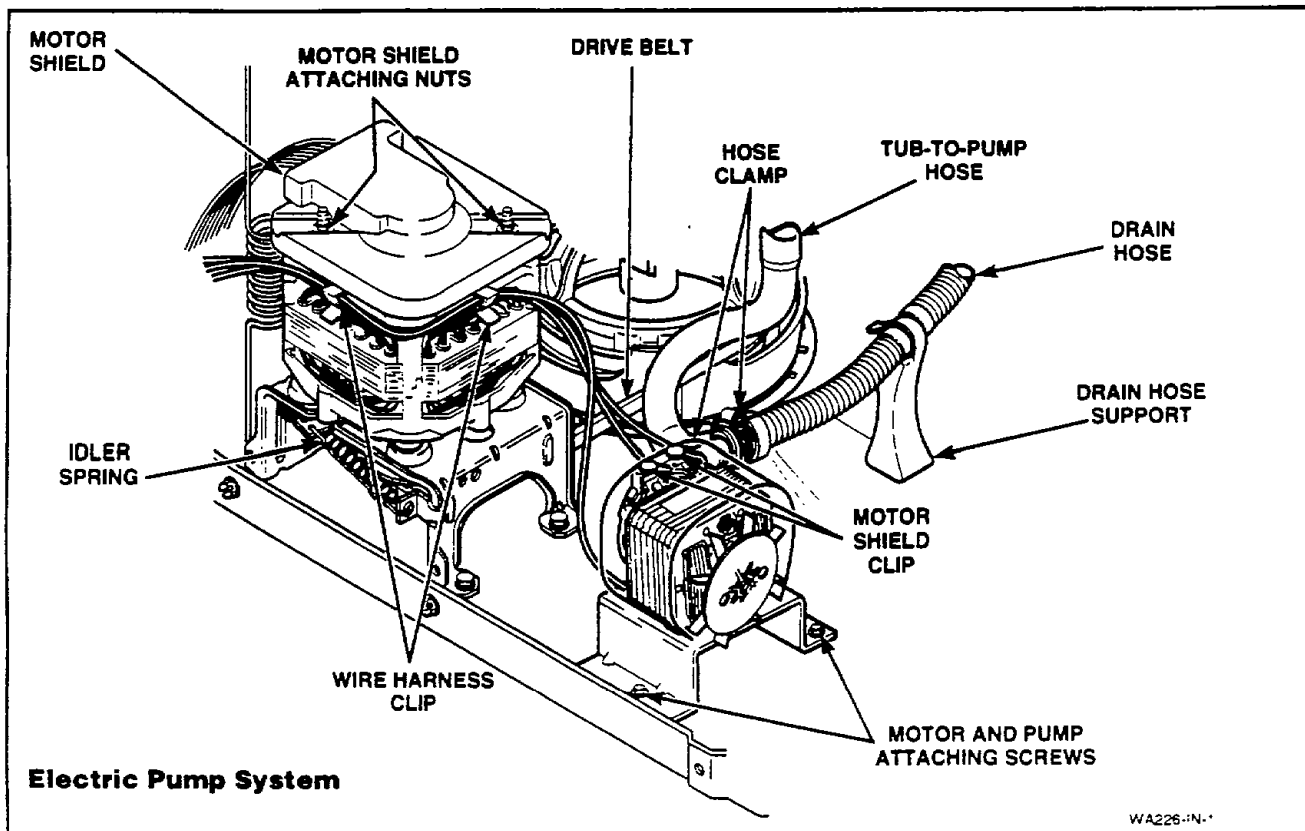
- Disconnect wire harness from motor switch by pressing down on locking tab on top of connection block and at the same time pull connection block away from motor switch, *Figure 25*.
- Remove the two wire harness clips holding the pump motor wire harness to the motor frame, *Figure 31*.
- Remove four screws holding motor and mounting bracket to washer base, *Figure 31*, then lift complete assembly out of washer.

MOTOR REMOVAL

Remove nuts, steel washers, spacers and rubber mounts holding motor to mounting bracket, *Figure 31*. 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 31* for motor and mounting bracket assembly sequence.



WA226-N

Figure 31

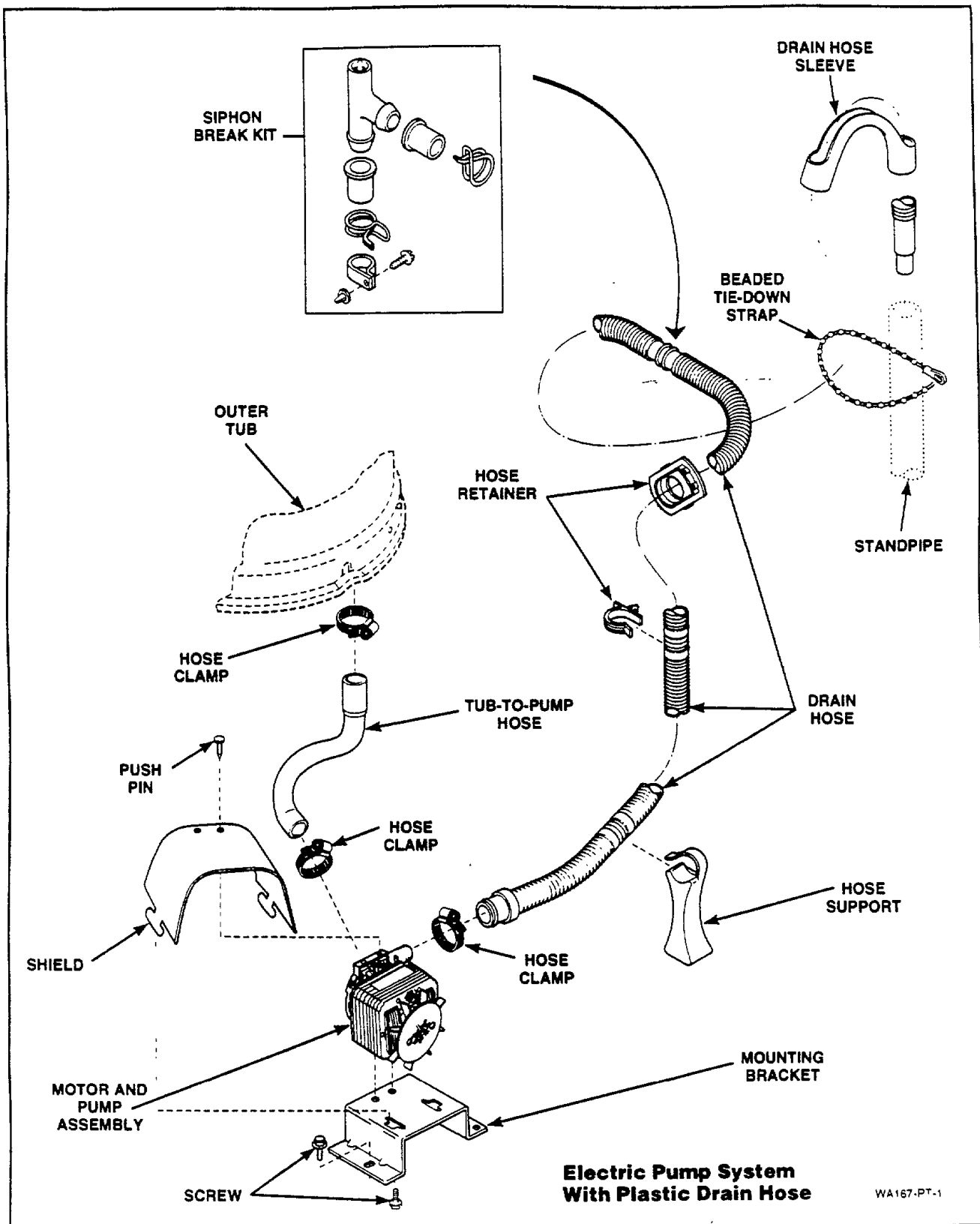


Figure 32

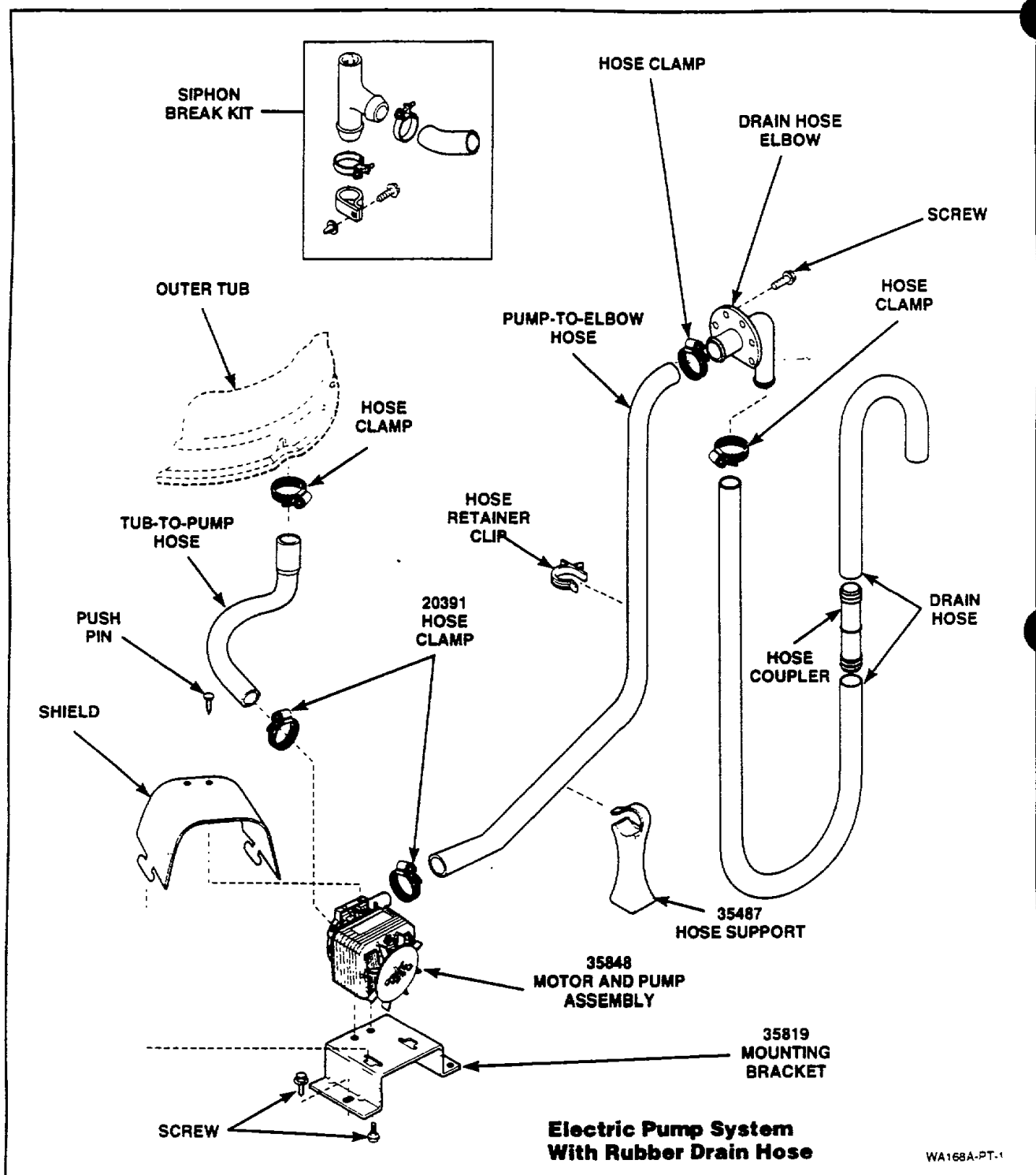


Figure 33

▲ 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

18. IDLER LEVER AND PULLEY

- Remove two screws from bottom edge of front panel, *Figure 23*.
- 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 the outer tub, therefore, before removing hoses from pump, the hoses must be pinched off or drained to prevent water spillage on the floor.

- Washers With Direct Drive Pump —** Loosen hose clamps and remove hoses from pump assembly, *Figure 24*.
- Unhook the idler spring and helper spring from the idler lever, *Figure 27*.

IMPORTANT: Use care when removing the idler spring and helper spring. If the idler spring or helper spring are 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 24*.
- 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 25*.
- Remove four screws holding motor assembly to washer base, *Figure 25*, then lift complete assembly out of water.
- Remove nut, washer and bolt holding idler lever and pulley to motor mounting bracket, *Figure 27*.

NOTE: Refer to *Figure 27 or 30* for idler lever and pulley assembly sequence.

- Apply a light film of No. 21814 Lubricant to the area of the idler lever that makes contact with the motor mounting bracket.

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

19. MOTOR DRIVE PULLEY OR PUMP PULLEY

- Remove two screws from bottom edge of front panel, *Figure 23*.
- Pull bottom of panel away from the 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 the outer tub, therefore, before removing hoses from pump, the hoses must be pinched off or drained to prevent water spillage on the floor.

- Washers With Direct Drive Pump —** Loosen hose clamps and remove hoses from pump assembly, *Figure 24*.
- Unhook the idler spring and helper spring from the idler lever, *Figure 27*.

IMPORTANT: Use care when removing the idler spring and helper spring. If the idler spring or helper spring are 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 24*.
- 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 25*.
- Remove four screws holding motor assembly to washer base, *Figure 25*, then lift complete assembly out of washer.
- Lay motor assembly on its side.

NOTE: To remove pulley, support motor shaft (to prevent bending shaft) and drive out pulley roll pin, *Figure 27 or 30*.

▲ WARNING

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

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

W003

20. DRIVE BELT

- a. Remove two screws from bottom edge of front panel, *Figure 23*.
- 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 front mounting screw and loosen the rear mounting screw holding pump and bracket to washer base, *Figure 28*. Pivot the entire assembly toward motor to loosen belt tension.
- d. Reach in through front of the motor mount and move idler lever to the left to release tension on belt.

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

- e. While holding the idler lever, reach in and around the right side of the motor and run the belt off the right side of the large drive pulley, *Figure 24, 29 or 31*.
- f. Remove belt from motor pulley and pull belt out through front of motor mount.

IMPORTANT: Drive belt **MUST** be replaced with special clutch-type belt for proper washer operation.

TO INSTALL DRIVE BELT

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

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

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

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

NOTE: There is no belt adjustment after installing the drive belt.

- e. Install pump belt, adjust belt per paragraph 41.

▲ WARNING

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

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

W003

21. PUMP BELT (Belt Driven Pump)

- Remove two screws from bottom edge of front panel, *Figure 23*.
- Pull bottom of panel away from washer until hold-down clips (located on top flange of panel) disengage from slots in cabinet top.
- Remove front mounting screw and loosen rear mounting screws holding pump and bracket to washer base, *Figure 34*. Pivot entire assembly toward motor to loosen belt tension.
- Run belt off motor pulley, then remove belt from pump pulley.

NOTE: After installing the pump belt, adjust belt, paragraph 41.

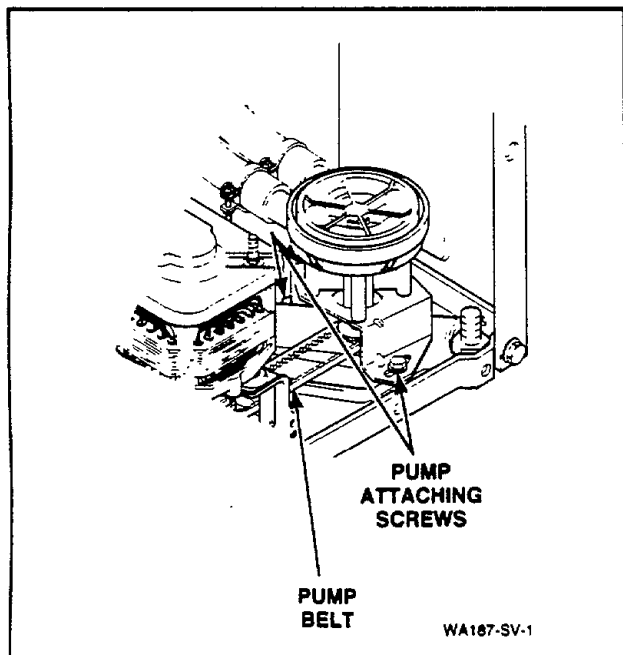


Figure 34

22. PUMP ASSEMBLY (Belt Driven Pump)

- Remove pump belt, paragraph 21.

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

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

- Slide pump and mounting bracket toward front of washer and lift assembly out of washer.
- Loosen hose clamps and remove hoses from pump assembly, *Figure 34*.

PUMP MOUNTING BRACKET

Remove four screws holding pump to mounting bracket, *Figure 35*.

NOTE: Refer to *Figure 35* for pump and mounting bracket assembly sequence.

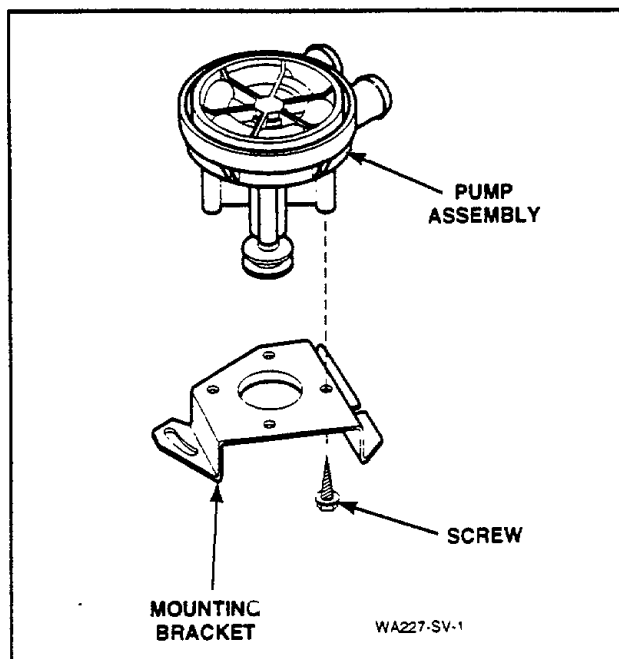


Figure 35

▲ WARNING

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

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

W003

23. MOTOR AND PUMP ASSEMBLY
(Electric Pump System)

- a. Remove two screws from bottom edge of front panel, *Figure 23*.
- b. Pull bottom of panel away from washer until hold-down clips (located on top flange of panel) disengage from slots in cabinet top. Disengage shield from mounting bracket.
- c. Disconnect pump wires from motor terminals, *Figure 31*.

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

- d. Loosen hose clamps and remove hoses from the pump assembly, *Figure 31*.
- e. Remove screws holding pump and mounting bracket to washer base, *Figure 31*.

NOTE: See *Figure 32 or 33* for pump assembly sequence.

- f. Remove screws holding pump assembly to mounting bracket, *Figure 32 or 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

24. MOTOR SWITCH

- Remove two screws from bottom edge of front panel, *Figure 36*.
- Pull bottom of panel away from washer until hold-down clips (located on top flange of panel) disengage from slots in cabinet top.
- Remove two locknuts holding motor shield to motor, *Figure 27 or 30*, and remove shield.
- 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 25*.

- Remove screw holding motor switch to motor, *Figure 25*, and remove switch.
- Disconnect the internal motor leads from the motor switch terminals.

NOTE: Refer to the Wiring Schematics, Page 98 or 99, for rewiring the internal switch wires.

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

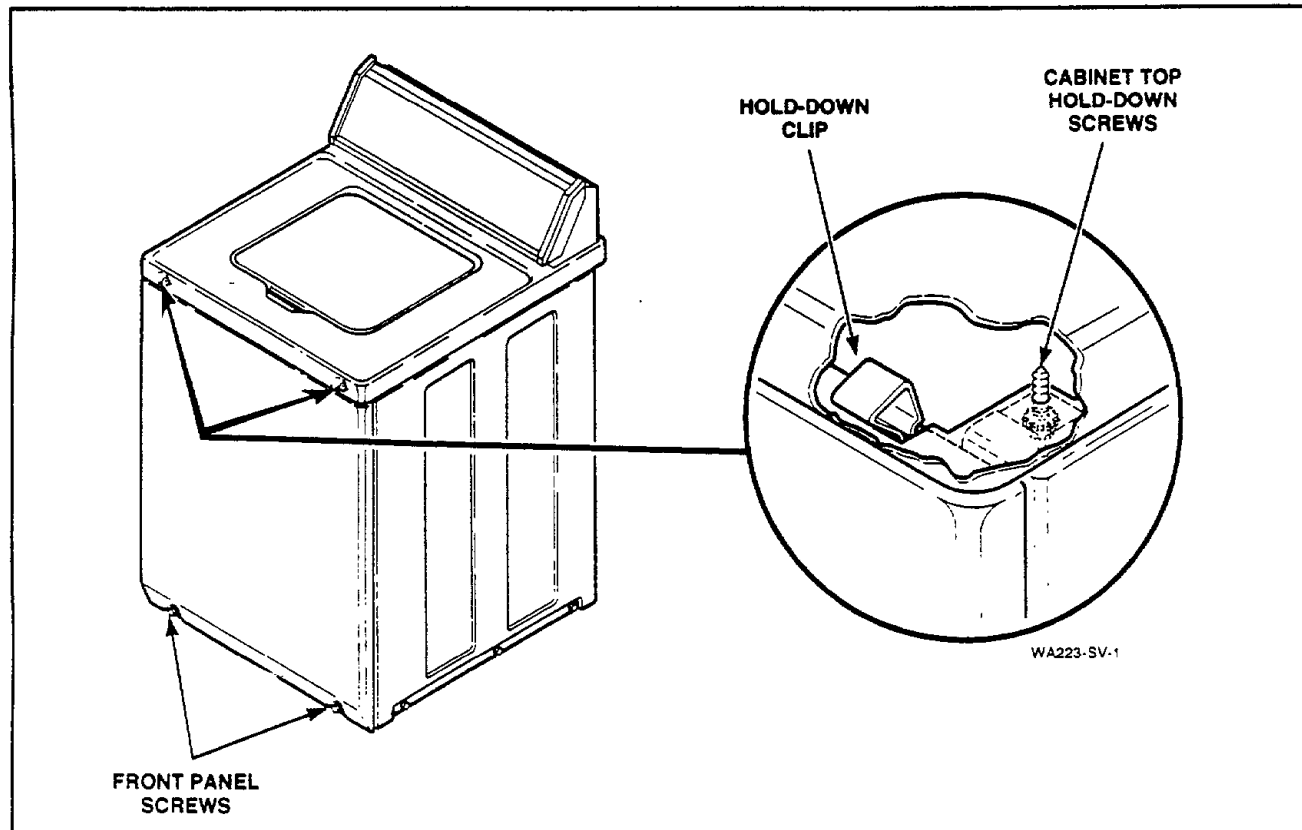


Figure 36

▲ 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

25. CABINET TOP ASSEMBLY

- Remove two screws from bottom edge of front panel, *Figure 36*.
- Pull bottom of panel away from washer until hold-down clips (located on top flange of panel) disengage from slots in cabinet top, *Figure 36*.
- Remove two cabinet top hold-down screws, *Figure 36*.
- If the area or space permits, tape loading door closed and lift cabinet top to a vertical position by hinging it on the rear hinges.

NOTE: Cabinet top is self-supporting, however, a small chain may be used for additional support, *Figure 37*.

IMPORTANT: Before lowering cabinet top into position, pivot outer tub forward far enough to prevent damaging (bending) the out-of-balance switch lever.

TO REMOVE CABINET TOP FROM WASHER

- Repeat steps "a", "b" and "c" above.
- Remove six screws (3 on top and 3 at lower front) holding the control hood assembly to the control hood rear panel and cabinet top, *Figure 38*.
- Disconnect hose from pressure switch and push hose down through hole in cabinet top.
- Disconnect wire harness at disconnect blocks.
- Reinstall control hood assembly.
- Tape loading door closed.
- Lift front of cabinet top slightly and pull forward to disengage from rear hinges.
- Pull top forward far enough to permit disconnecting green ground wires from top left rear corner of washer cabinet, *Figure 39*.

- Disconnect wires from mixing valve solenoids at the quick disconnect blocks, *Figure 39*.

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

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

IMPORTANT: DO NOT lay the cabinet top flat because it will damage the door switch actuator arm or lever. When reinstalling cabinet top and before lowering top into position, pivot the outer tub forward far enough to prevent damaging (bending) the out-of-balance switch lever.

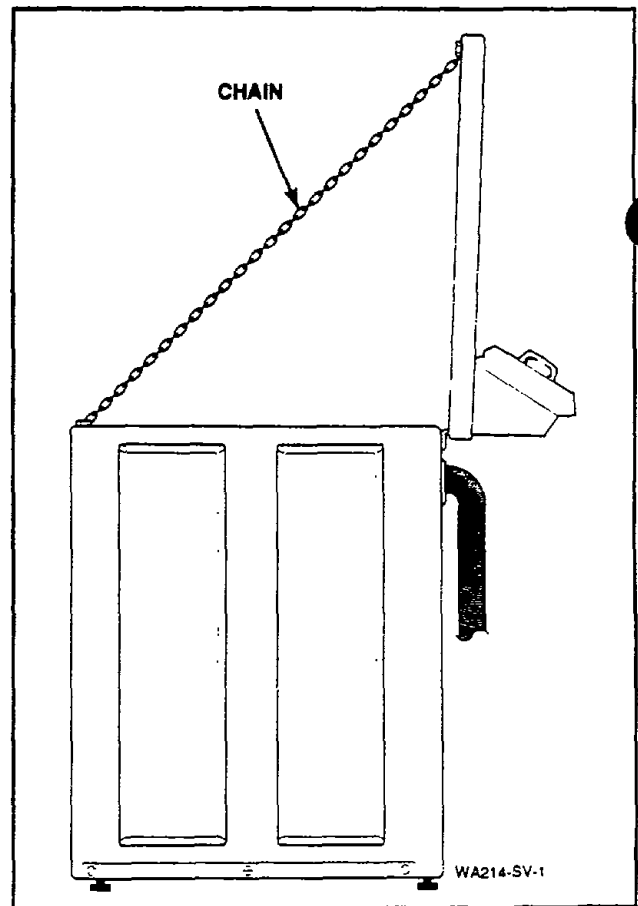


Figure 37

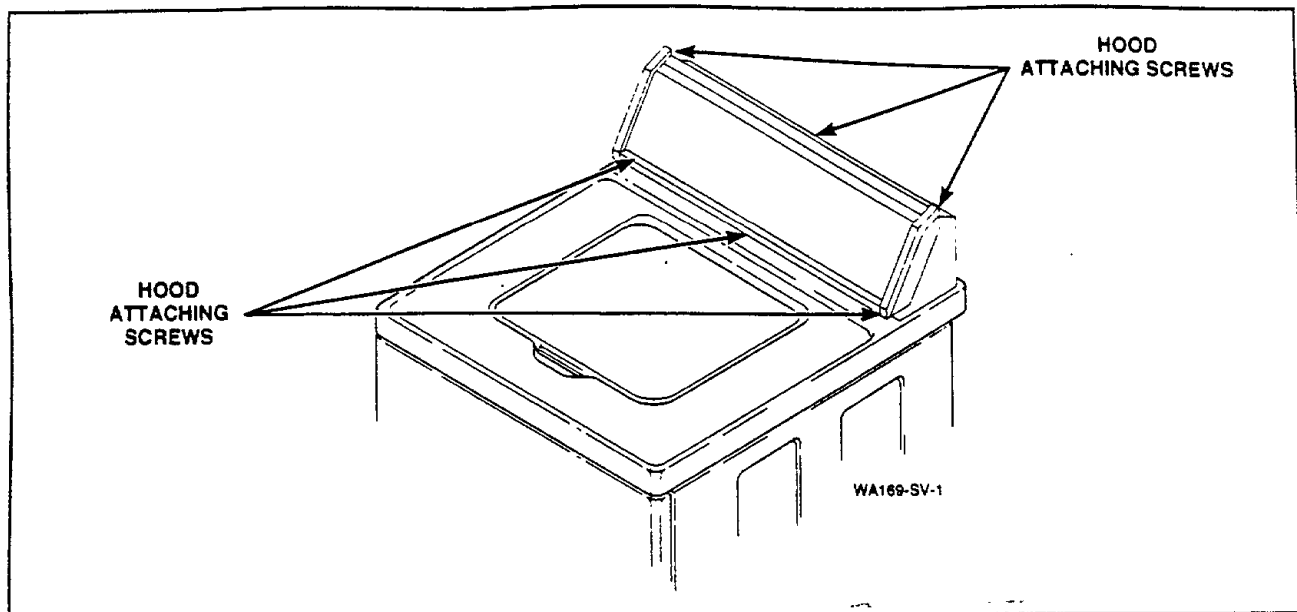


Figure 38

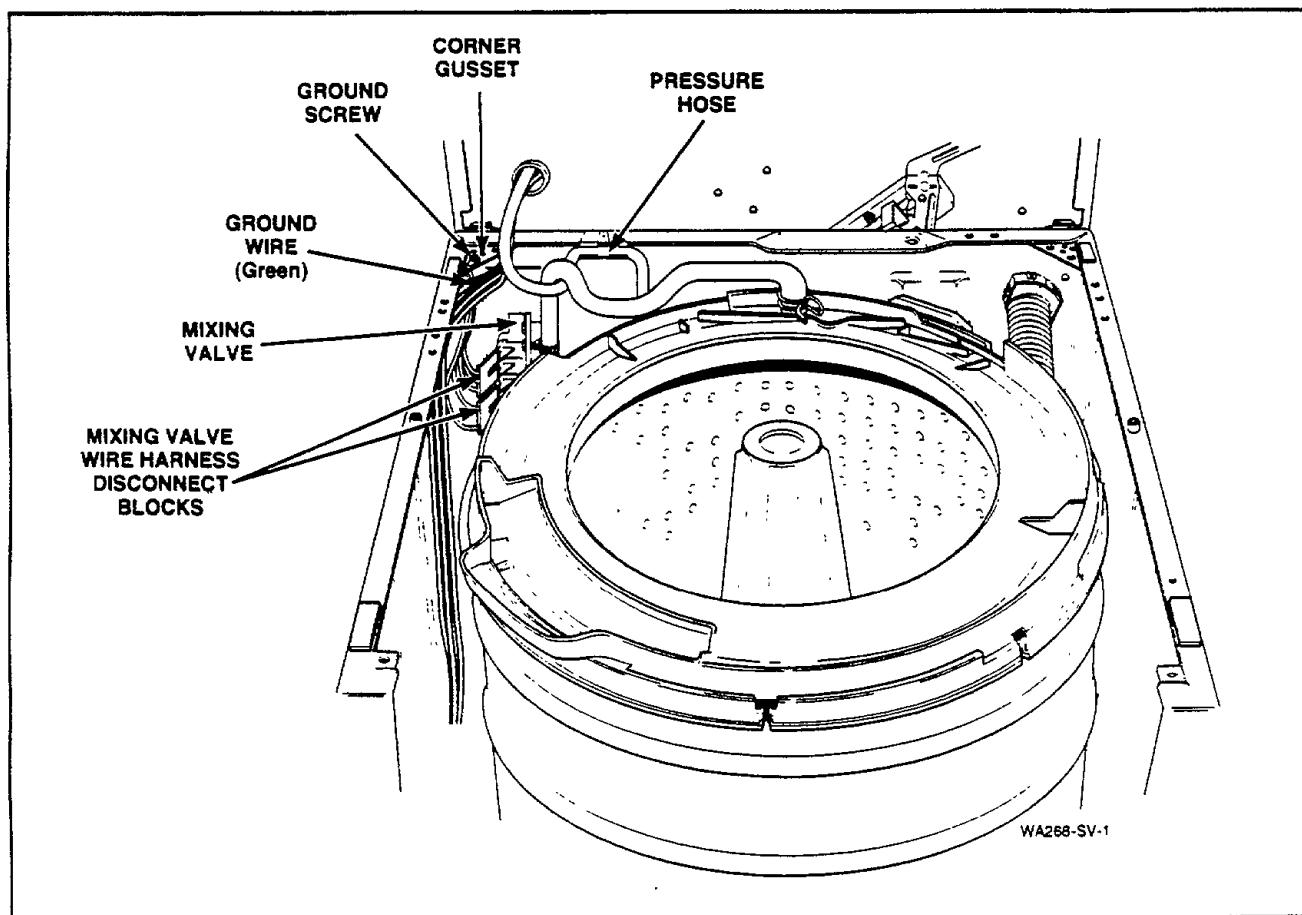


Figure 39

▲ 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

26. DOOR AND OUT-OF-BALANCE SWITCH ASSEMBLY

- Remove six screws (3 on top and 3 at lower front) holding control hood assembly to the control hood rear panel and cabinet top, *Figure 38*. Then set hood assembly on cabinet top on protective padding.
- Disconnect wires from switch.
- Move the switch lever off the switch plunger, *Figure 40*, by moving the lever back under the cabinet top.
- Place the blade of a small screwdriver, or similar device, between front of switch and switch holder, *Figure 41*.
- Slide the blade to the left to disengage the switch clip tab holding the switch to the switch holder, *Figure 41*.
- Disengage the opposite end of the switch clip tab from the holder and remove switch out through opening in cabinet top.
- Remove the switch clip from the old switch and place through holes in new switch, *Figure 42*.
- Place the switch tool, Part No. 272P4, over the switch clip tabs as shown in *Figure 43*.
- Carefully place switch down into switch holder, *Figure 44*; line up the switch clip tabs with the slots in the switch holder, *Figure 44*.
- Place a putty knife, or similar device, on backside of switch clip, *Figure 45*; push on switch clip as you carefully pull the switch tool out between switch and holder, allowing the switch clip tabs to engage with slots in holder, *Figure 45*.

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

- Reset the switch lever by raising and lowering the loading door.

NOTE: Be sure the switch lever tab locates itself on top of the switch plunger.

- Reconnect wires to switch terminals.

NOTE: Refer to appropriate wiring diagram when rewiring switch.

- Reinstall control hood assembly on cabinet top.

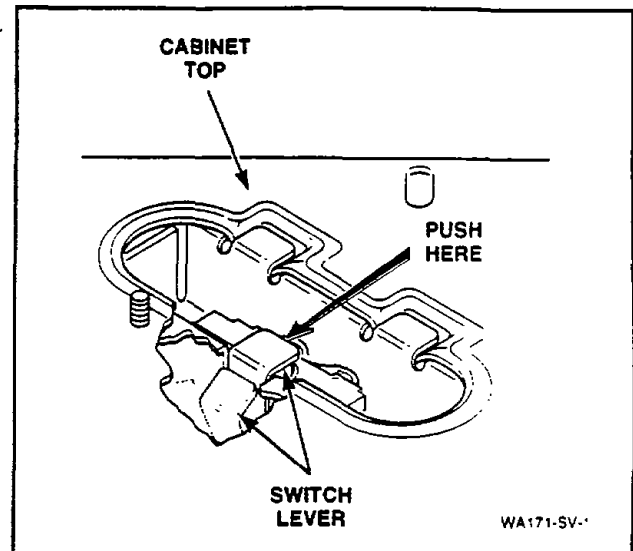


Figure 40

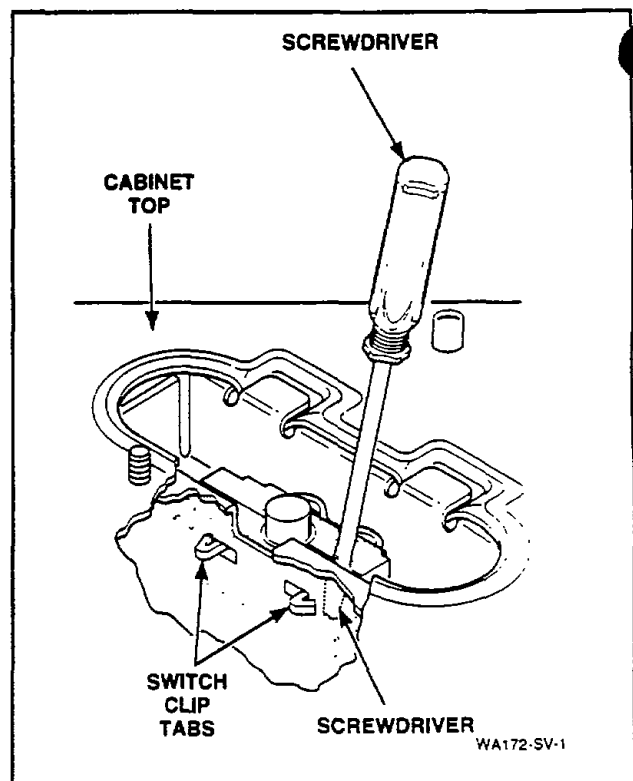


Figure 41

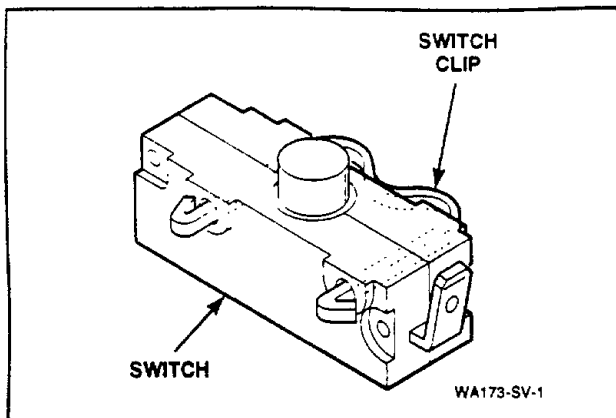


Figure 42

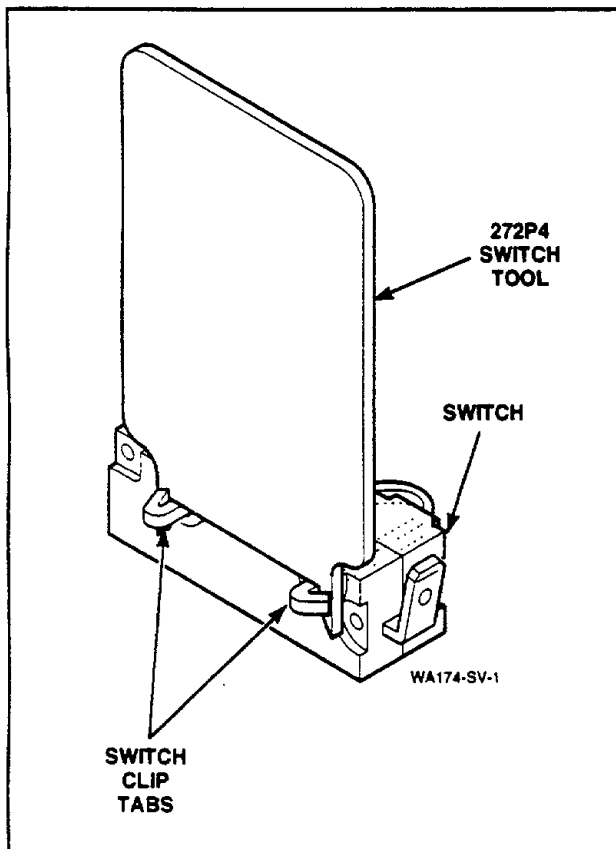


Figure 43

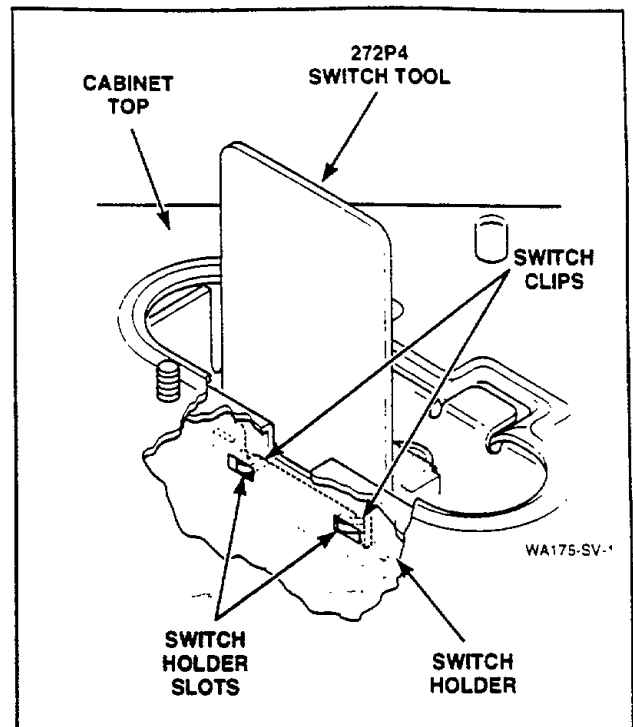


Figure 44

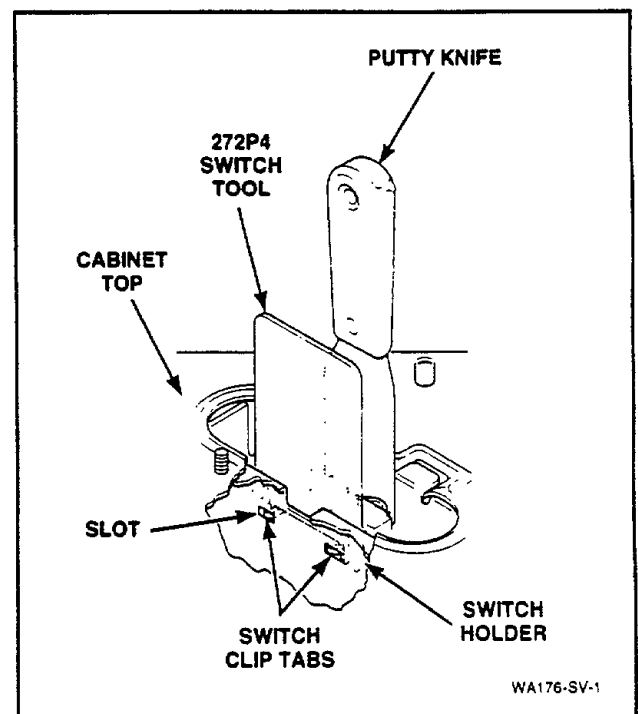


Figure 45

▲ 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

27. MIXING VALVE ASSEMBLY

- Remove two screws from bottom edge of front panel, *Figure 36*.
- Pull bottom of panel away from washer until hold-down clips (located on top flange of panel) disengage from slots in cabinet top, *Figure 36*.
- Remove two cabinet top hold-down screws, *Figure 36*.
- If the area or space permits, tape loading door closed and lift cabinet top to a vertical position by hinging it on the rear hinges.

NOTE: Cabinet top is self-supporting, however, a small chain may be used for additional support, *Figure 37*.

IMPORTANT: Before lowering cabinet top into position, pivot outer tub forward far enough to prevent damaging (bending) the out-of-balance switch lever.

- Remove two screws holding mixing valve to mounting bracket at rear of washer cabinet, *Figure 46*.

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

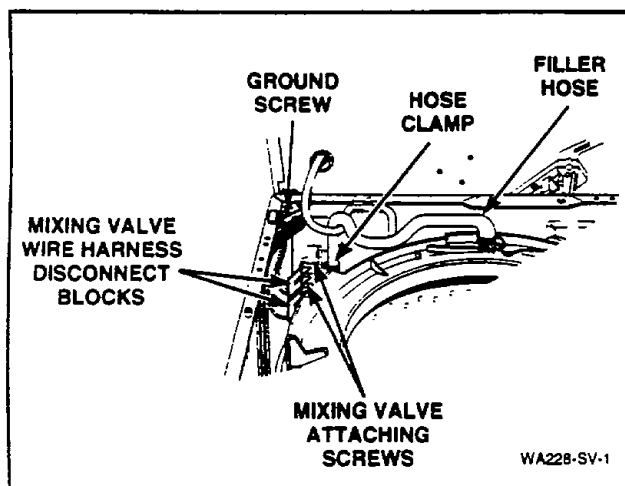


Figure 46

- Pull the mixing valve out toward front of washer far enough to permit disconnecting water inlet and fill hoses from mixing valve, *Figure 46*.
- Remove wires and quick disconnect blocks from mixing valve solenoid terminals, *Figure 46*.

NOTE: Refer to appropriate wiring diagram when rewiring solenoids.

28. WASHTUB AND CLOTHES GUARD

- Open loading door.
- To remove the agitator by hand, place two agitator hooks, No. 254P4P, under the bottom edge of the agitator, *Figure 15*.

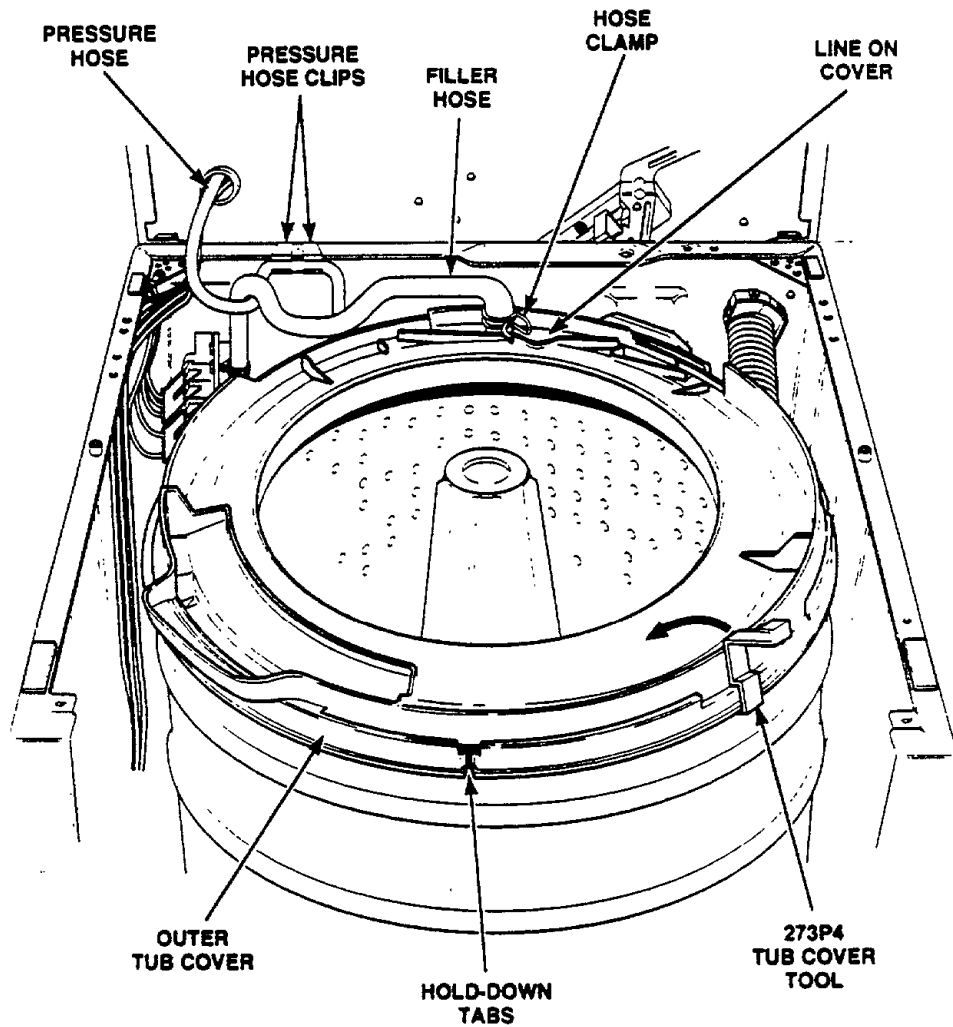
IMPORTANT: Hooks should be positioned 180 degrees of each other, and must be placed under the agitator vane for greater stability. If hooks are placed between the vane area, damage to the agitator may occur.

- Using a rocking motion (back and forth) carefully lift the agitator off the drive bell.
- Hinge cabinet top or remove, paragraph 25.
- Loosen hose clamp and remove filler hose from outer tub cover, *Figure 47*.

NOTE: When installing filler hose, white line on hose must be aligned with line located on top side of outer tub cover, *Figure 47*.

- There are eight tub cover hold-down tabs which snap over the outer tub flange. Using the special tub cover tool, Part No. 273P4, insert the two prongs of the tool underneath each side of the tandem tabs, *Figure 47*. Tilt the tool toward the center of the 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 the outer tub flange and remove outer tub cover.

(continued on Page 42)



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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

NOTE: When installing outer tub cover, always use a new cover gasket. Before installing the new gasket, clean and remove any foreign material that is in the gasket groove of the cover. The outer tub flange must also be cleaned.

Starting at the positioning pin that is located between the two bleach funnel outlet tabs, lay gasket into the gasket groove of the tub cover, *Figure 48*. Using the semi-curved end of the tub cover tool Part No. 273P4, *Figure 48*, press against both tabs, when installing gasket past the ends of hold-down tabs and to bottom of groove. One by one, insert gasket past tips of all eight hold-down tabs.

IMPORTANT: Care must be taken not to twist or bunch the gasket in any one area as this will cause a leak after assembly.

NOTE: Using your fingers, press gasket down into gasket groove between the hold-down tabs. The tool is designed to spread open the hold-down tabs thus preventing tearing of the gasket during installation of gasket into gasket groove in cover.

With the tub cover tilted at approximately a 45 degree angle, *Figure 49*, insert the positioning pin (on the tub cover) into the notch on the outer tub flange. The two bleach funnel outlet tabs must be angled downward toward the inside wall of the outer tub. This is required for proper dispensing of the bleach. Lower the cover down and starting at the hold-down tabs next to the positioning pin, push down firmly on top of the tab area until hold-down tab ends snap over edge of outer tub flange. This must be done with all eight hold-down tabs to ensure a water-tight seal between tub cover and outer tub flange.

The best assembly procedure is to start on one side, then cross over to the opposite side. Continue with this criss-cross pattern, until tub cover is fully seated. Visually check each tab area again to ensure that cover is seated.

Check whether or not the bleach drain tabs are in the down position by looking through the two square holes in the bleach funnel area of the tub cover. If tabs are not down, a small screwdriver can be inserted down through the holes in the bleach funnel area and the tabs can be bent into position.

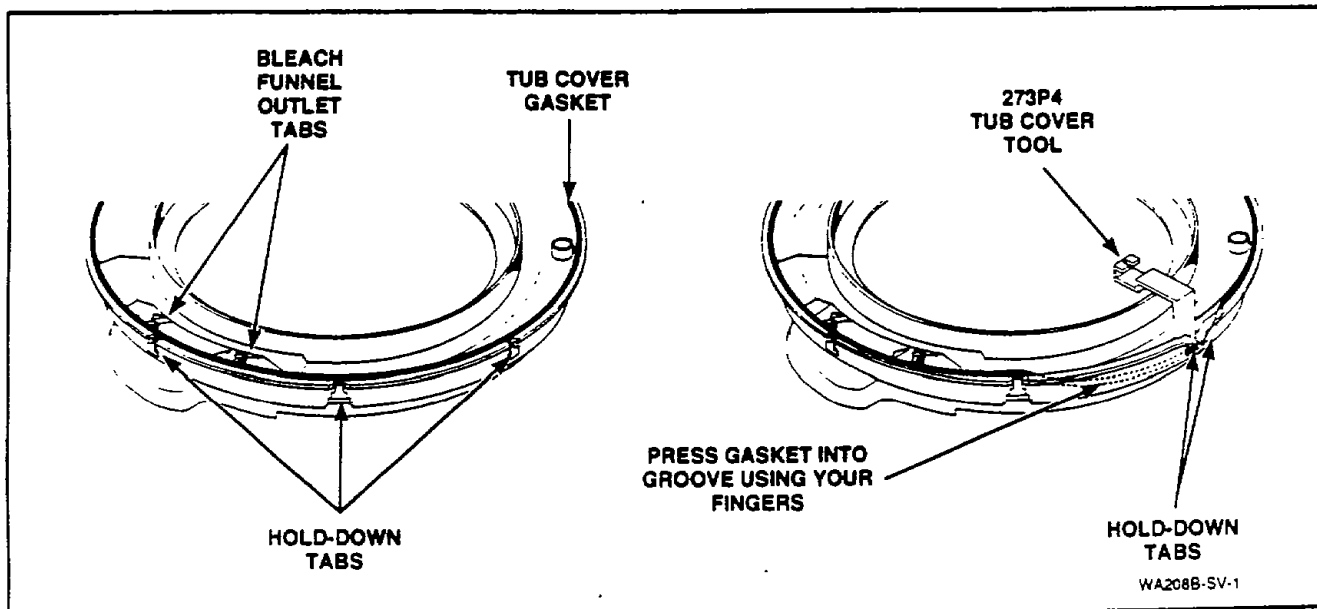


Figure 48

(continued on page 44)

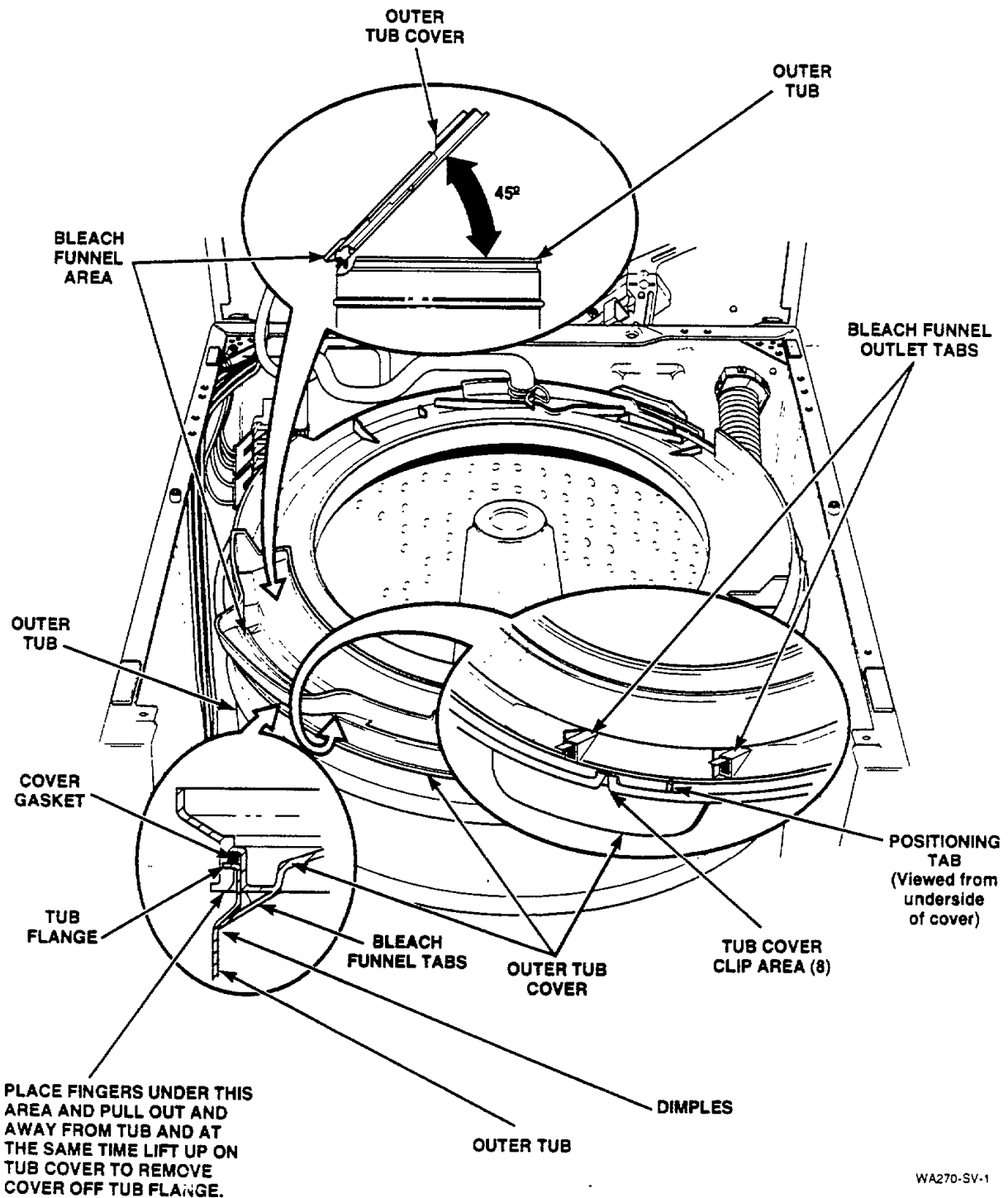


Figure 49

▲ 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

- h. Remove four screws and washers holding washtub to hub, *Figure 50*.

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

- i. Grasp the top flange of the washtub and lift washtub and clothes guard out of outer tub.

IMPORTANT: When removing the washtub and clothes guard, DO NOT lift up on the clothes guard as you could damage it.

NOTE: When installing washtub, make sure the lint filter is between the underside of the washtub and hub. Some models are equipped with a gasket. On these models, make sure all traces of the old gasket are removed from the bottom of the washtub. When installing washtub in these models, always use a new gasket between the washtub and hub.

TO REMOVE CLOTHES GUARD FROM WASHTUB

- a. Place blade of a small screwdriver into slots between clothes guard and washtub, *Figure 50*.
b. Carefully pry pins of clothes guard out of holes in washtub, *Figure 50*.

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

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

TO INSTALL CLOTHES GUARD IN WASHTUB

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.

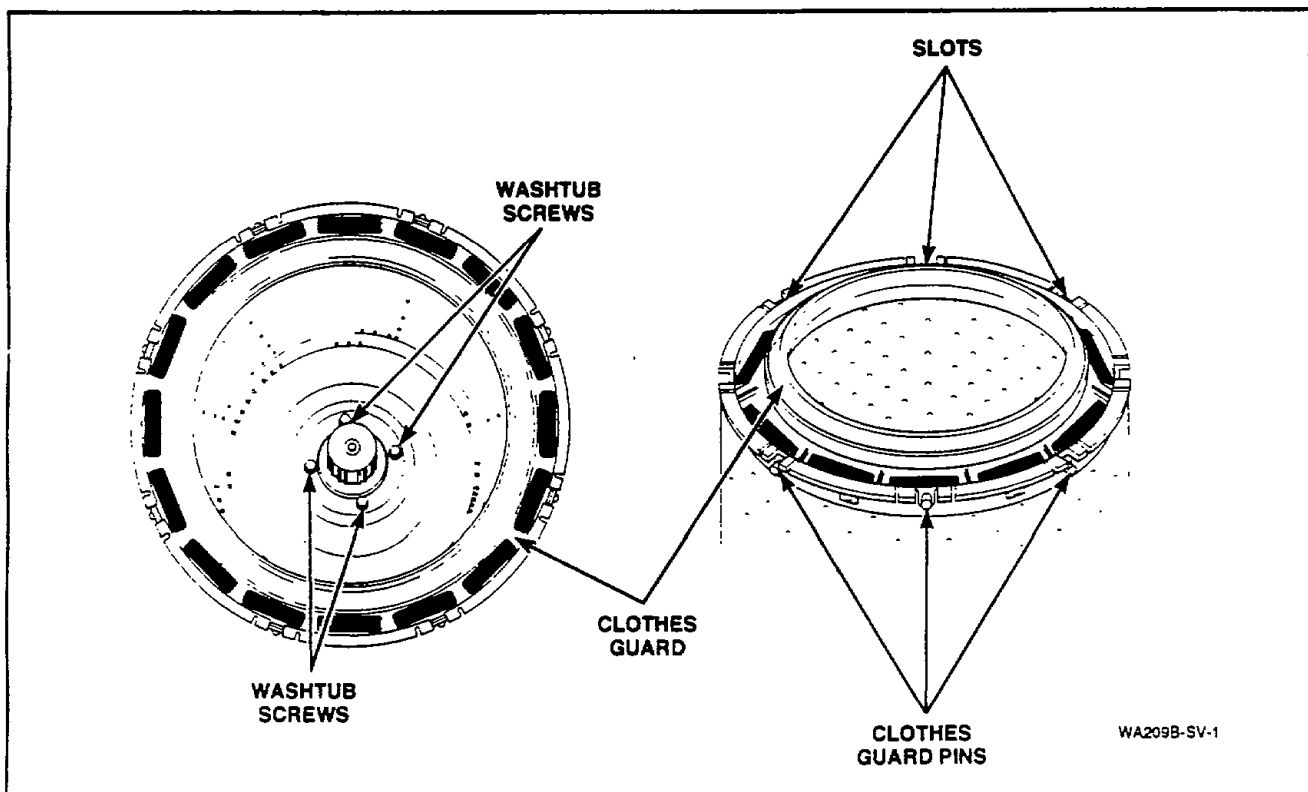


Figure 50

▲ WARNING

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

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

W003

29. HUB AND SEAL KIT ASSEMBLY

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

- a. Remove two screws from the bottom edge of front panel, *Figure 36*.
- b. Pull bottom of panel away from washer until the hold-down clips (located on top flange of panel) disengage from slots in cabinet top, *Figure 36*.
- c. Open loading door.
- d. To remove the agitator by hand, place two agitator hooks, No. 254P4P, under bottom edge of agitator, *Figure 15*.

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

- e. Using a rocking motion (back and forth) carefully lift agitator off drive bell.
- f. Hinge cabinet top or remove, paragraph 25.
- g. Loosen hose clamp and remove filler hose from outer tub cover, *Figure 47*.

NOTE: When reinstalling filler hose, white line on hose must be aligned with line located on top side of outer tub cover, *Figure 47*.

- h. There are eight tub cover hold-down tabs which snap over the outer tub flange. Using the special tub cover tool, Part No. 273P4, insert the two prongs of tool underneath each side of tandem tabs, *Figure 47*. 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.
- i. Lift cover off outer tub and set beside washer cabinet.

NOTE: When installing outer tub cover, always use a new cover gasket. Before installing new gasket, clean and remove any foreign material that is in the gasket groove of the cover. The outer tub flange must also be cleaned.

Starting at the positioning pin that is located between the two bleach funnel outlet tabs, lay gasket into gasket groove of tub cover, *Figure 48*.

Using the semi-curved end of the tub cover tool, Part No. 273P4, *Figure 48*, press against both tabs when installing gasket past the ends of hold-down tabs and to bottom of groove. One by one, insert gasket past tips of all eight hold-down tabs.

IMPORTANT: Care must be taken not to twist or bunch the gasket in any one area as this will cause a leak after assembly.

NOTE: Using your fingers, press gasket down into gasket groove between the hold-down tabs. The tool is designed to spread open the hold-down tabs thus, preventing tearing of the gasket during installation of gasket into gasket groove in cover.

With the tub cover tilted at approximately a 45 degree angle, *Figure 49*, insert the positioning pin on the tub cover into the notch on the outer tub flange. The two bleach funnel outlet tabs must be angled downward toward the inside wall of the outer tub. This is required for proper dispensing of the bleach. Lower the cover down and starting at the hold-down tabs next to the positioning pin, push down firmly on top of the tab area until hold-down tab ends snap over edge of outer tub flange. This must be done with all eight hold-down tabs to ensure a water-tight seal between tub cover and outer tub flange.

The best assembly procedure is to start on one side, then cross over to the opposite side. Continue with this criss-cross pattern, until tub cover is fully seated. Visually check each tab area again to ensure that cover is seated.

Check whether or not the bleach funnel outlet tabs are in the down position by looking through the two square holes in the bleach funnel area of the tub cover. If tabs are not down, a small screwdriver can be inserted down through the holes in the bleach funnel area and the tabs can be bent into position.

▲ WARNING

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

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

W003

- j. Remove four screws holding washtub to hub, *Figure 48*, then lift washtub out of outer tub.

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

NOTE: When installing washtub, make sure lint filter is between the underside of the washtub and hub. Some models are equipped with a gasket. On these models, make sure all traces of the old gasket are removed from the bottom of the washtub. When installing the washtub in these models, always use a new gasket between the washtub and hub.

TO REMOVE AGITATOR DRIVE BELL

- a. Remove the screw and "O" ring washer from the top side of the drive bell.

NOTE: It may require using the No. 253P4 Drive Bell Tool to remove the drive bell from the transmission shaft, if not, proceed to step i.

- b. Back the bolt out of tool approximately three quarters of the way.
c. Place the tool over the bell, making sure the indent on the jaw lines up with the wide slots on the bell, *Figure 17*.
d. Screw the bolt down through the hole in top of bell until bolt bottoms out in the hole in the transmission shaft.
e. Place the lip of each jaw under the bottom edge of the drive bell, making sure the indent on the jaw lines up with the wide slots on the bell. Then tighten the two wing nuts to hold the jaws firmly against the drive bell, *Figure 17*.
f. Use an adjustable wrench and turn the large nut on the tool **COUNTERCLOCKWISE** to pull the drive bell from the transmission shaft, *Figure 18*.

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

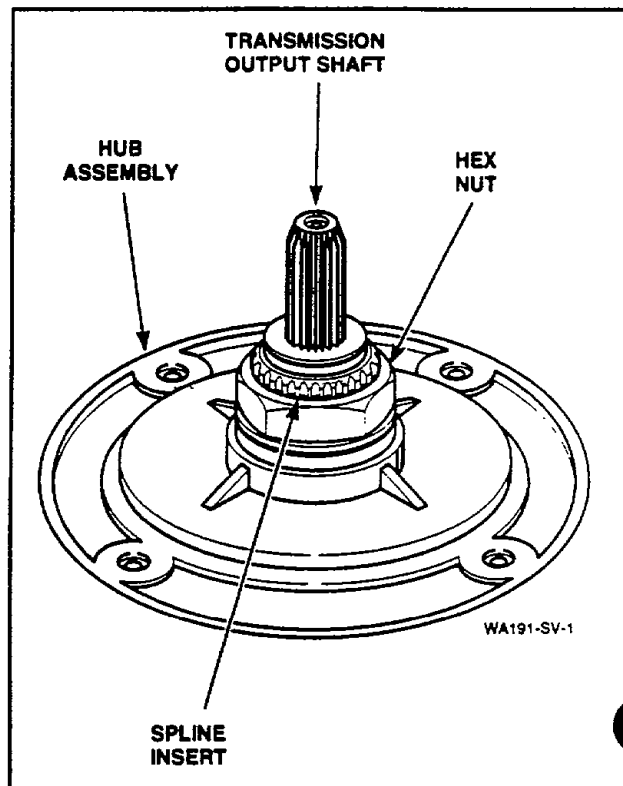


Figure 51

- g. Turn the quarter inch bolt out of the transmission shaft, and remove tool and drive bell from washer.
h. Loosen the two wing nuts and remove the drive bell from the tool.
i. Remove old seal from hub by placing a flat blade screwdriver between bottom edge of seal and the hub using the washtub bolts as a pry area to pop off the lower seal bead. Then grasp the seal and pull straight up freeing the upper seal bead.
j. Remove large hex nut using a No. 237P4 Hex Wrench, *Figure 51*.
k. Remove spline insert from transmission tube, *Figure 51*.

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

▲ WARNING

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

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

W003

- l. Remove hub from splines on transmission tube.

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

- m. Remove old water seal from outer tub.

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

TO INSTALL THE NO. 495P3 HUB AND SEAL KIT

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

- a. Apply a small amount of 27615P Sealant, (supplied in kit) around outer surface of tub flange, *Figure 52*.

IMPORTANT: DO NOT allow sealant to contact the flinger, *Figure 52*, because this could prevent flinger from keeping moisture out of upper bearing.

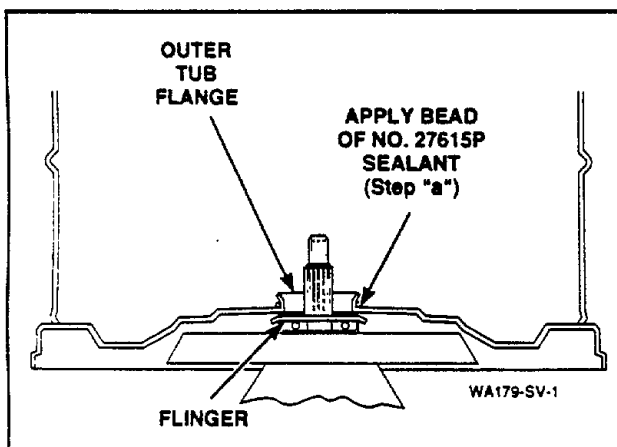


Figure 52

- b. 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 53*.

IMPORTANT: Do not over lubricate!

- c. Insert stainless steel sleeve into water seal from bottom side of seal, *Figure 53*, until sleeve is flush with bronze portion of seal.

- d. Leave garter spring on seal. Place new seal over outer tub flange (with seal lip on outside of tub flange). Then press seal into tub flange opening using moderate finger pressure.
- e. Carefully apply a small amount of No. 27615P Sealant (supplied with kit) around outer edge of seal and tub. (The area located just below garter spring, *Figure 53*.)

IMPORTANT: Do not allow sealant to contact the sealing surface of the water seal because it will cause a water leak.

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

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

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

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

(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. Thoroughly clean any foreign material from seal surface area of hub and bronze bearing, *Figure 54*.
- j. Lubricate new seal with liquid soap or soapy water to aid in assembling of seal onto hub.
- k. Place new drive bell seal on hub, *Figure 55*, and carefully push seal into position using large end of the No. 274P4 Seal Tool, *Figure 56*.

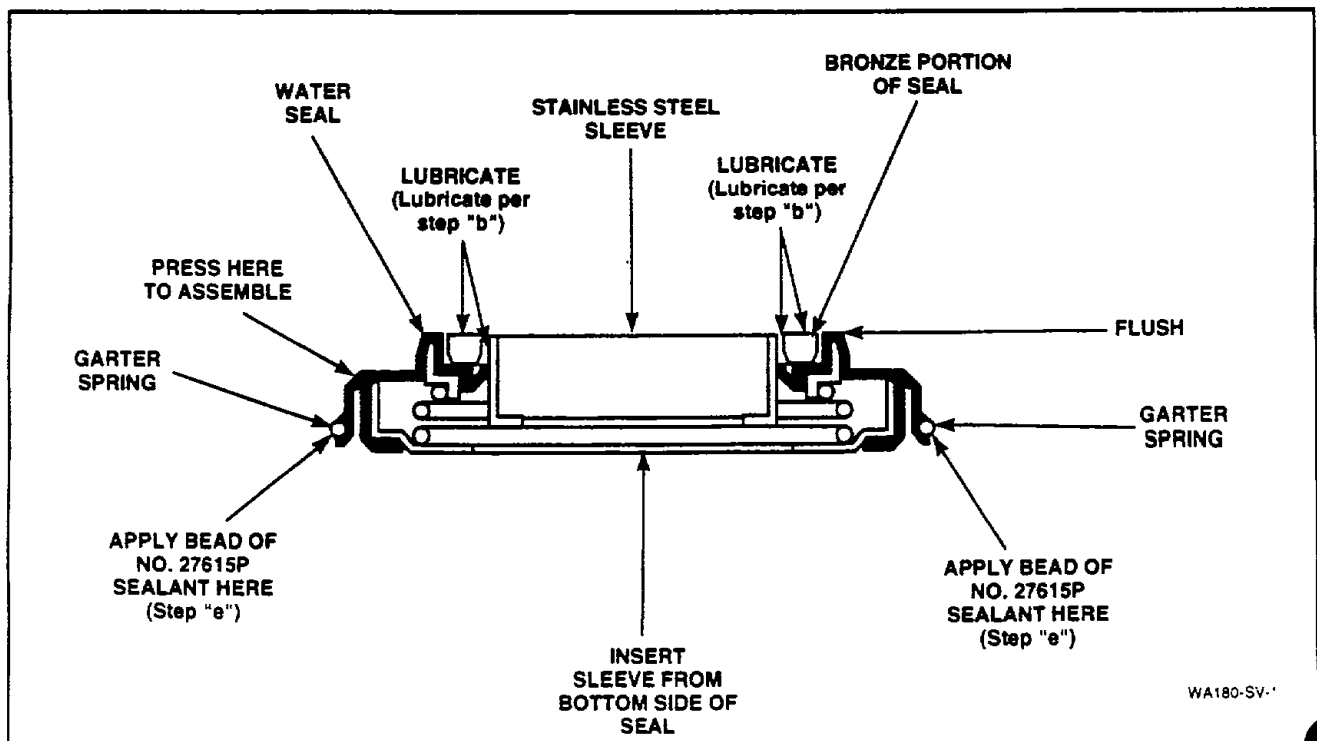
IMPORTANT: Using a small pocket mirror, check entire circumference of seal flange to make sure seal is pressed down against shoulder on hub; there should be no gap!

- l. Turn seal tool upside-down and place small end over output shaft and onto washer, *Figure 57*.
- m. Push down on tool with a quick motion until tool bottoms out and top of seal is fully seated, *Figure 57*.
- n. To Install Drive Bell
 1. Position new drive bell over transmission shaft. Rotate drive bell until splines in drive bell line up with splines on transmission shaft.
 2. Push drive bell down on transmission shaft.
 3. Place new "O" ring onto new shoulder screw. Thread new shoulder screw down through hole in top of drive bell and into transmission shaft.

NOTE: Torque new shoulder screw to approximately 75 inch pounds.

- o. Place the lint filter (gasket on some models) on hub.

NOTE: Be sure holes in lint filter (or gasket) are aligned with bolt holes in tub.



WA180-SV

Figure 53

▲ WARNING

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

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

W003

- p. Install washtub by grasping top flange of washtub and carefully lowering washtub down onto lint filter (or gasket) and hub.

IMPORTANT: Before setting tub into place, be sure bolt holes in washtub line up with holes in lint filter (or gasket) and hub.

- q. Secure washtub to hub, using four screws previously removed.

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

NOTE: When installing outer tub cover, always use a new cover gasket. Before installing the new gasket, clean and remove any foreign material that is in the gasket groove of the cover. The outer tub flange must also be cleaned.

Starting at the positioning pin that is located between the two bleach funnel outlet tabs, lay gasket into the gasket groove of the tub cover, *Figure 48*. Using the semi-circled end of the tub cover tool, Part No. 273P4, *Figure 48*, press against both tabs when installing gasket past the ends of hold-down tabs and to bottom of groove. One by one, insert gasket past tips of all eight hold-down tabs.

IMPORTANT: Care must be taken not to twist or bunch the gasket in any one area as this will cause a leak after assembly.

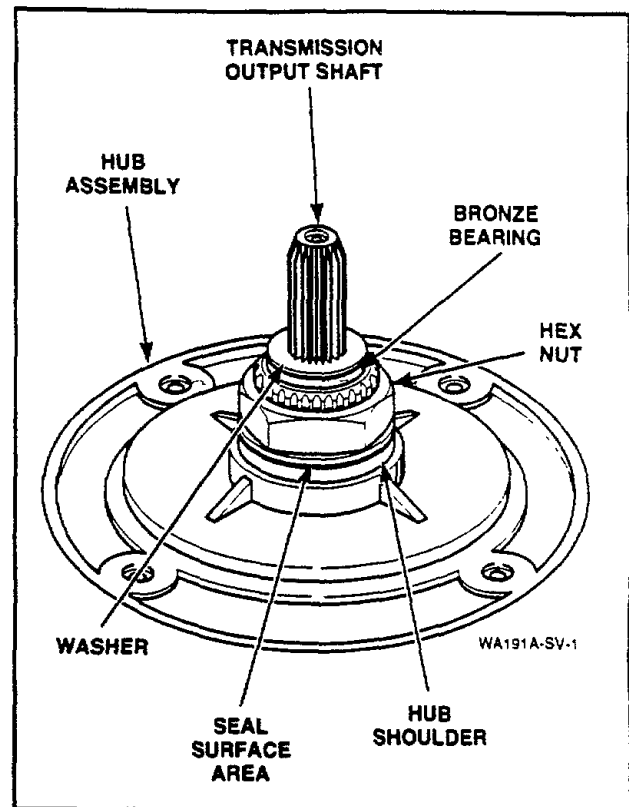


Figure 54

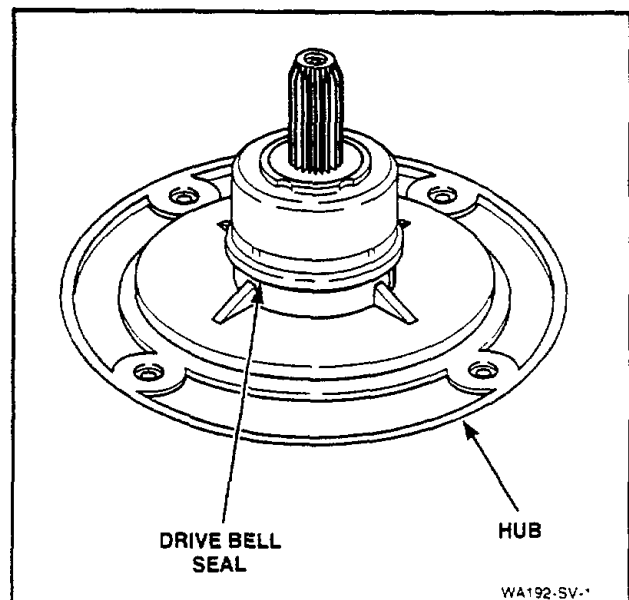


Figure 55

(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.**

WCC

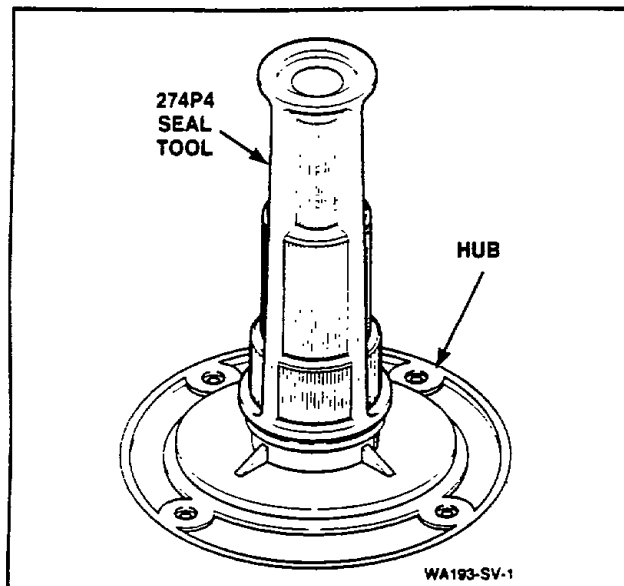


Figure 56

NOTE: Using your fingers, press gasket down into gasket groove between the hold-down tabs. The tool is designed to spread open the hold-down tabs thus preventing tearing of the gasket during installation of gasket into gasket groove in cover.

With the tub cover tilted at approximately a 45 degree angle, *Figure 49*, insert the positioning pin on the tub cover into the notch on the outer tub flange. The two bleach funnel outlet tabs must be angled downward toward the inside wall of the outer tub. This is required for proper dispensing of the bleach. Lower the cover down and starting at the hold-down tabs next to the positioning pin, push down firmly on top of the tab area until hold-down tab ends snap over edge of outer tub flange. This must be done with all eight hold-down tabs to ensure a water-tight seal between tub cover and outer tub flange.

The best assembly procedure is to start on one side, then cross over to the opposite side. Continue with this criss-cross pattern, until tub cover is fully seated. Visually check each tab area again to ensure that cover is seated.

Check whether or not the bleach funnel outlet tabs are in the down position by looking through the two square holes in the bleach funnel area of the tub cover. If tabs are not down, a small screwdriver can be inserted down through the holes in the bleach funnel area and the tabs can be bent into position.

- r. Reinstall the filler hose on the outer tub cover.

NOTE: When reinstalling filler hose, the white line on hose that connects to tub cover must be aligned with line located on top side of outer tub cover, *Figure 47*.

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

- u. Reinstall cabinet top and secure to washer cabinet using screws previously removed.
v. Reinstall front panel.

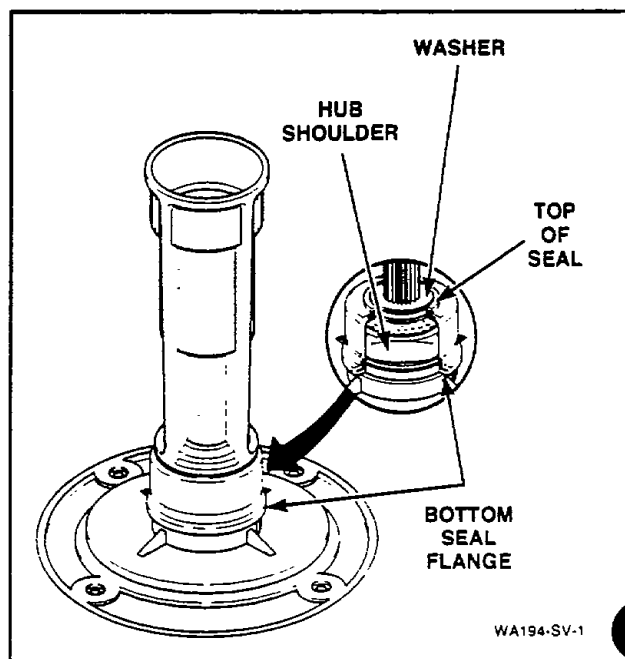


Figure 57

▲ WARNING

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

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

W003

30. OUTER TUB

- Open loading door.
- To remove the agitator by hand, place two agitator hooks, No. 254P4P, under the bottom edge of the agitator, *Figure 15*.

IMPORTANT: Hooks should be positioned 180 degrees of each other, and must be placed under the agitator vane for greater stability, *Figure 15*. If hooks are placed between the vane area, damage to the agitator may occur.

- Using a rocking motion (back and forth) carefully lift the agitator off the drive bell.
- Remove two screws from bottom edge of front panel, *Figure 36*.
- Pull bottom of panel away from washer until hold-down clips (located on top flange of panel) disengage from slots in cabinet top, *Figure 36*.
- Hinge cabinet top or remove, paragraph 25.
- Loosen hose clamp, and disconnect filler hose from outer tub cover, *Figure 47*.

NOTE: When reinstalling filler hose, the white line on hose that connects to tub cover must be aligned with line located on top side of outer tub cover, *Figure 47*.

- There are eight tub cover hold-down tabs which snap over the outer tub flange. Using the special tub cover tool, Part No. 273P4, insert the two prongs of the tool underneath each side of the tandem tabs, *Figure 47*. Tilt the tool toward the center of the 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 the outer tub flange and remove cover.
- Remove the cover from the outer tub and remove the old gasket from tub cover.

NOTE: When installing outer tub cover, always use a new cover gasket. Before installing the new gasket, clean and remove any foreign material that is in the gasket groove of the cover. The outer tub flange must also be cleaned.

Starting at the positioning pin that is located between the two bleach funnel outlets tabs, lay gasket into the gasket groove of the tub cover, *Figure 48*. Using the semi-curved end of the tub cover tool, Part No. 273P4, *Figure 48*, press against both tabs when installing gasket past the ends of hold-down tabs and to bottom of groove. One by one, insert gasket past tips of all eight hold-down tabs.

IMPORTANT: Care must be taken not to twist or bunch the gasket in any one area as this will cause a leak after assembly.

NOTE: Using your finger, press gasket down into gasket groove between the hold-down tabs. The tool is designed to spread open the hold-down tabs thus preventing tearing of the gasket during installation of gasket into gasket groove in outer tub cover.

With the tub cover tilted at approximately a 45 degree angle, *Figure 49*, insert the positioning pin (on the tub cover) into the notch on the outer tub flange. The two bleach funnel outlets tabs must be angled downward toward the inside wall of the outer tub. This is required for proper dispensing of the bleach. Lower the cover down and starting at the hold-down tabs next to the positioning pin, push down firmly on top of the tab area until hold-down tab ends snap over edge of outer tub flange. This must be done with all eight hold-down tabs to ensure a water-tight seal between tub cover and outer tub flange.

The best assembly procedure is to start on one side, then cross over to the opposite side. Continue with this criss-cross pattern, until tub cover is fully seated. Visually check each tab area again to ensure that cover is seated.

Check whether or not the bleach funnel outlets tabs are in the down position by looking through the two square holes in the bleach funnel area of the tub cover. If tabs are not down, a small screwdriver can be inserted down through the holes in the bleach funnel area and the tabs can be bent into position.

- Remove four screws and washers holding washtub to hub, *Figure 50*.

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

(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

- k. Grasp the top flange of the washtub and lift washtub (with clothes guard attached) out of outer tub.

IMPORTANT: When removing the washtub and clothes guard, **DO NOT** lift up on the guard as you could damage it.

- l. Remove agitator drive bell, paragraph 13.
m. Remove the large hex nut using a No. 237P4 Hex Wrench. Then remove spline insert from transmission tube, *Figure 51*.

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

- n. Remove hub from splines on transmission tube.

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

- o. Remove old water seal from outer tub.

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

NOTE: When reinstalling or replacing outer tub, always install a new No. 495P3 Hub and Seal Kit, paragraph 29.

- p. 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, or helper spring, are overstretched, washer operation will be affected.

- q. While holding the 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 the idler spring and helper spring are left hooked to the motor mounting bracket.

With idler spring and helper spring hooked to motor mounting bracket, the idler lever extends out through rear of bracket. When removing or reinstalling complete tub assembly, the 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 the idler pulley with the drive belt, and a chipped idler pulley will damage the belt.

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

- r. Using No. 289P4 Spring Hook Tool, unhook seven centering springs from lower edge of outer tub, *Figure 58*.

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

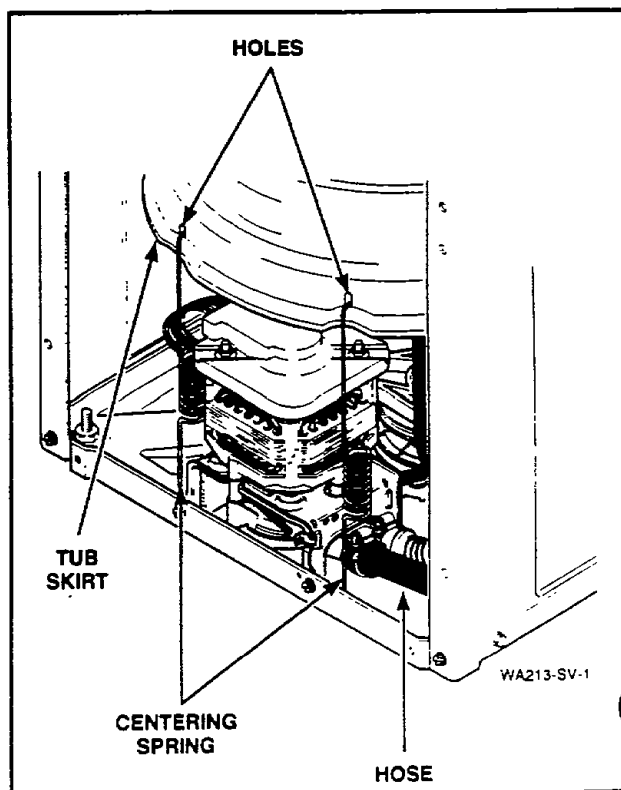


Figure 58

▲ WARNING

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

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

W003

- s. Disconnect hose from bottom of outer tub.
- t. Remove pressure hose from pressure bulb. Then remove tape holding pressure hose to outer tub, *Figure 62*.
- u. Grasp outer tub and lift complete tub assembly (with transmission, balance ring and pivot dome attached) straight up and out of washer cabinet.
- v. Turn outer tub upside-down and set on protective padding.
- w. Remove screws holding each support leg to outer tub, *Figure 59*. Then lift transmission, balance ring and pivot dome off tub.

- x. Turn outer tub upright and remove pressure bulb and grommet.

NOTE: When installing grommet into outer tub, the thicker lip of the grommet must be installed to outside of tub. Lubricate outer surface of large opening of pressure bulb with liquid soap to aid when assembling 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. Torque screws between 90 to 130 inch pounds.

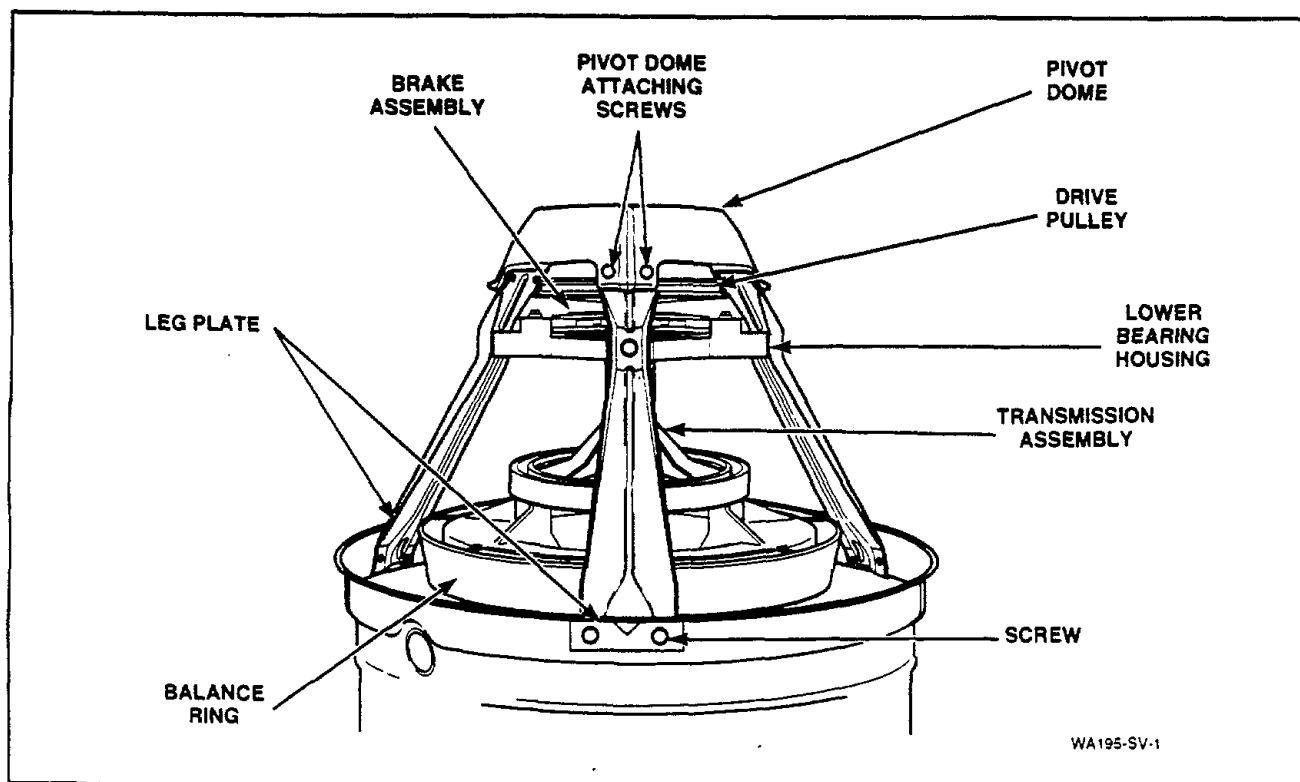


Figure 59

▲ WARNING

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

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

W003

31. DRIVE PULLEY AND HELIX

- Remove two screws from bottom edge of front panel, *Figure 36*.
- Pull bottom of panel away from washer until hold-down clips (located on top flange of panel) disengage from slots in cabinet top, *Figure 36*.
- Hinge cabinet top or remove, paragraph 25.
- Loosen hose clamp and disconnect filler hose from outer tub cover, *Figure 47*.

NOTE: When reinstalling filler hose, the white line on hose that connects to tub cover must be aligned with line located on top side of outer tub cover, *Figure 47*.

- 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, or helper spring, are overstretched, washer operation will be affected.

- While holding the 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 the idler spring and helper spring are left hooked to the motor mounting bracket.

With idler spring and helper spring hooked to motor mounting bracket, the idler lever extends out through rear of bracket. When removing or reinstalling complete tub assembly, the 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 the idler pulley with the drive belt, and a chipped idler pulley will damage the belt.

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

- Using the No. 289P4 Spring Hook Tool, unhook the seven centering springs from lower edge of outer tub, *Figure 58*.

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

▲ WARNING

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

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

W003

- h. Disconnect hose from bottom of outer tub.
- i. Remove pressure hose from pressure bulb. Then remove tape holding pressure hose to outer tub, *Figure 62*.
- j. Grasp outer tub and lift complete tub module assembly (with transmission, balance ring, and pivot dome attached) straight up and out of washer cabinet.
- k. Turn the complete tub module upside-down and set on protective padding.
- l. Remove screws holding the three support legs to the pivot dome and remove dome, *Figure 59*.
- m. Remove screw, washer and helix holding drive pulley to input shaft of transmission assembly, *Figure 60*.
- n. Lift drive pulley up and out from between tub support legs.

IMPORTANT: DO NOT OVER LUBRICATE!

Excess lubricant can be thrown into the pivot dome area during normal operation of the washer. Any lubricant on the pivot dome or snubber pad and isolator assembly will cause premature tripping of the out-of-balance switch. This condition will persist until the lubricant is removed.

NOTE: When reinstalling pulley, place a small amount of No. 03200 Lubricant to the top side of the drive pulley that will be contacting the large flat washers. Lubricate the helix ramps and bore with a small amount of No. 03200 Lubricant. See *Figure 61*.

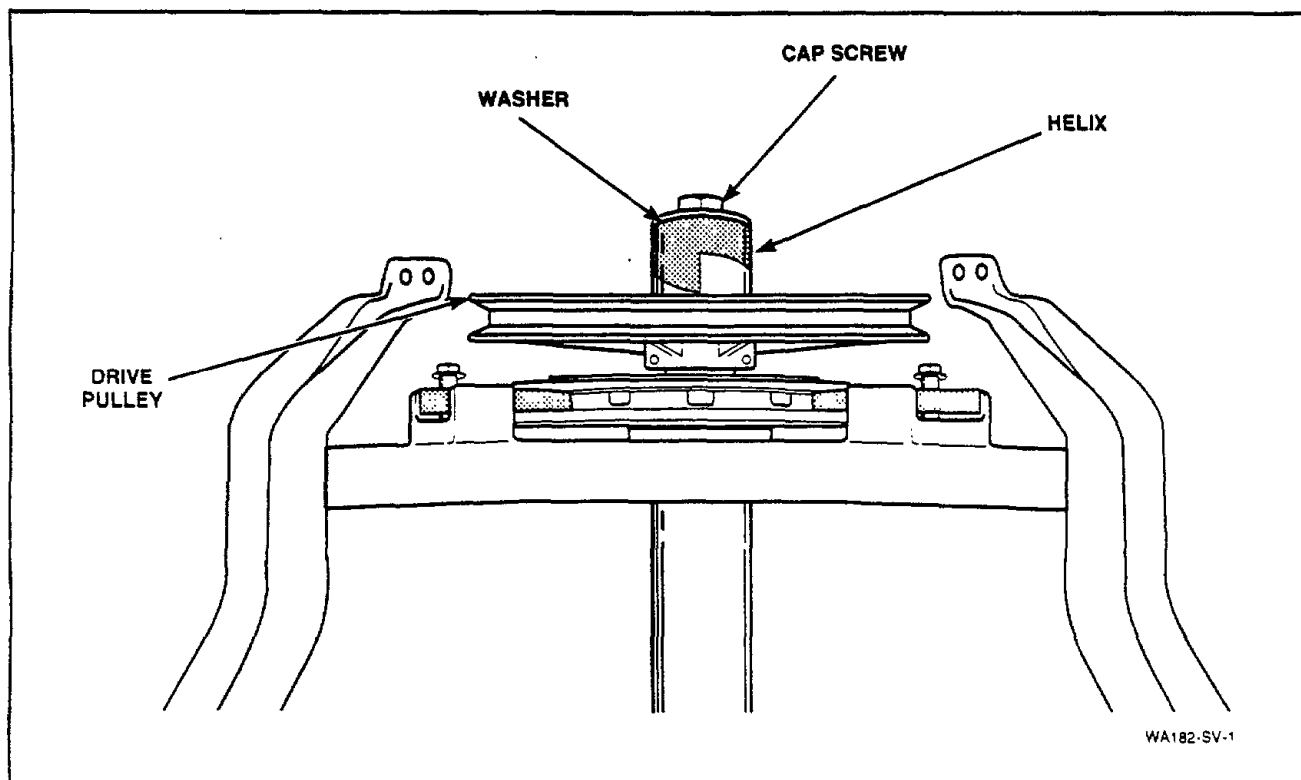


Figure 60

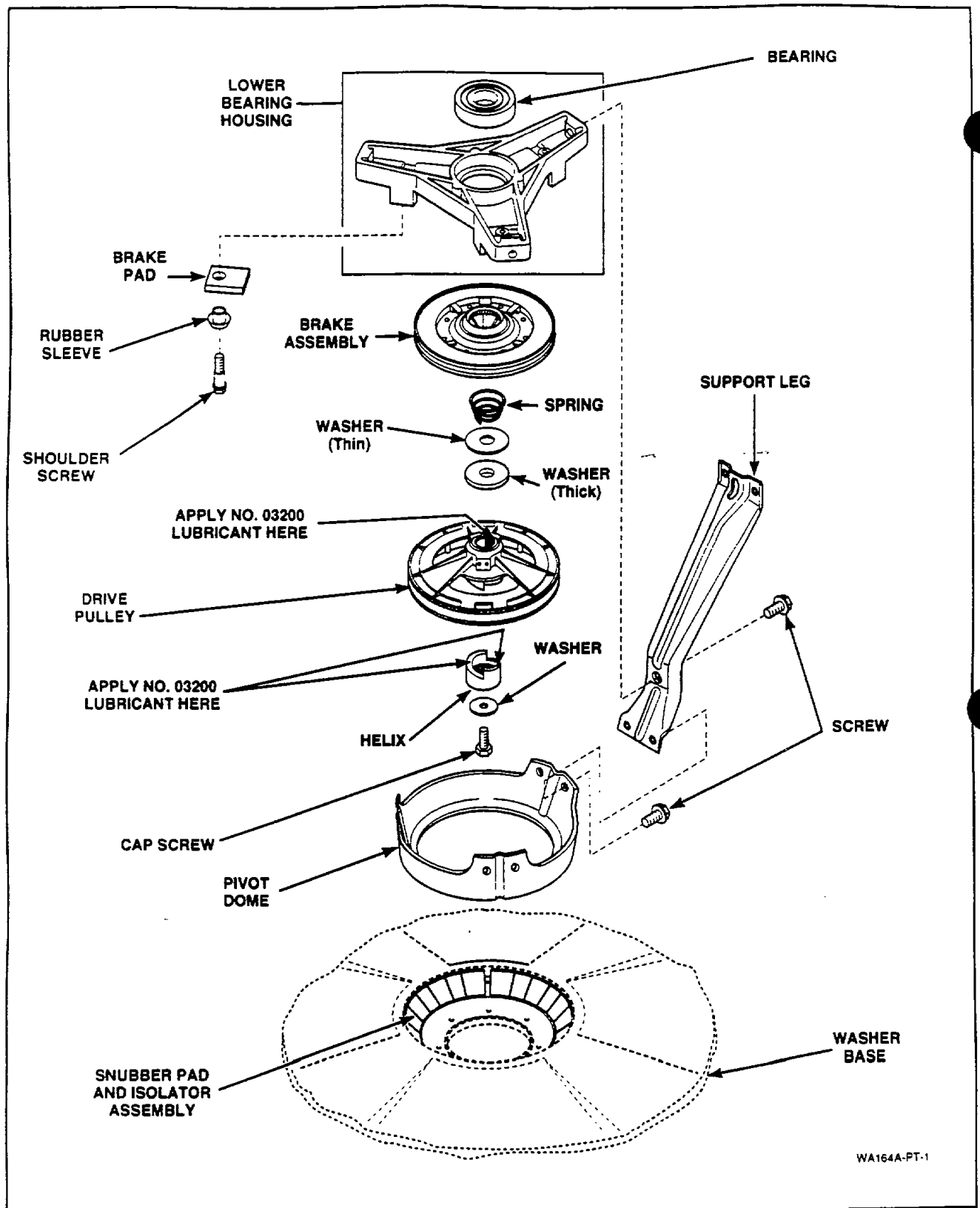


Figure 61

▲ 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

32. BRAKE ASSEMBLY

- Remove two screws from bottom edge of front panel, *Figure 36*.
- Pull bottom of panel away from washer until hold-down clips (located on top flange of panel) disengage from slots in cabinet top, *Figure 36*.
- Hinge cabinet top or remove, paragraph 25.
- Loosen hose clamp and disconnect filler hose from outer tub cover, *Figure 47*.

NOTE: When reinstalling filler hose, the white line on hose that connects to tub cover must be aligned with line located on top side of outer tub cover, *Figure 47*.

- 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, or helper spring, are overstretched, washer operation will be affected.

- While holding the 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 the idler spring and helper spring are left hooked to the motor mounting bracket.

With idler spring and helper spring hooked to motor mounting bracket, the idler lever extends out through rear of bracket. When removing or reinstalling complete tub assembly, the 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 the idler pulley with the drive belt, and a chipped idler pulley will damage the belt.

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

- Using the No. 289P4 Spring Hook Tool, unhook the seven centering springs from lower edge of outer tub, *Figure 58*.

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

- Disconnect hose from bottom of outer tub.
- Remove pressure hose from pressure bulb. Then remove tape holding pressure hose to outer tub, *Figure 62*.
- Grasp outer tub and lift complete tub module assembly (with transmission, balance ring, and pivot dome attached) straight up and out of washer cabinet.
- Turn the complete tub module upside-down and set on protective padding.
- Remove screws holding the three support legs to the pivot dome and remove dome, *Figure 59*.
- Remove screw, washer and helix holding drive pulley to input shaft of transmission assembly, *Figure 60*.
- Lift drive pulley up and out from between tub support legs.

NOTE: When reinstalling pulley, place a small amount of No. 03200 Lubricant to the top side of the drive pulley that will be contacting the large flat washer. Lubricate the helix ramps and bore with a small amount of No. 03200 Lubricant. See *Figure 61*.

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

IMPORTANT: The two large flat washers must be in place between spring and drive pulley when reassembling. The thicker washer must contact the top side of the drive pulley. See *Figure 61* for assembly sequence.

NOTE: When reassembling, place a small amount of No. 03200 Lubricant to top side of the drive pulley that will be contacting the large flat washer. Lubricate helix ramps and bore with a small amount of No. 03200 Lubricant. See *Figure 61*.

(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

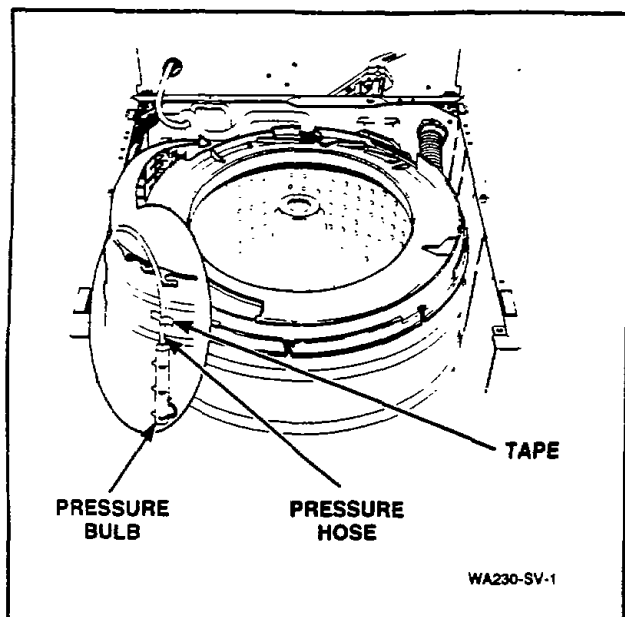


Figure 62

IMPORTANT: DO NOT OVER LUBRICATE!

Excess lubricant can be thrown into the pivot dome area during normal operation of the washer. Any lubricant on the pivot dome or snubber pad and isolator assembly will cause premature tripping of the out-of-balance switch. This condition will persist until the lubricant is removed.

- o. Using a right angle needle nose pliers, remove spring from around lower transmission tube (located inside brake assembly), *Figure 61*.

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

- p. Remove three screws holding brake pads, rubber sleeves and brake assembly to lower bearing housing, *Figure 61*, then remove brake assembly and pads off bottom of transmission assembly.

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

IMPORTANT: DO NOT OVER LUBRICATE!

Excess lubricant can be thrown into the pivot dome area during normal operation of the washer. Any lubricant on the pivot dome or snubber pad and isolator assembly will cause premature tripping of the out-of-balance switch. This condition will persist until the lubricant is removed.

NOTE: Refer to *Figure 61* for assembly sequence.

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

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

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

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

NOTE: After the washtub has been spinning for two minutes, the normal 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 the brake assembly and correct the 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

33. LOWER BEARING HOUSING

- Remove two screws from bottom edge of front panel, *Figure 36*.
- Pull bottom of panel away from washer until hold-down clips (located on top flange of panel) disengage from slots in cabinet top, *Figure 36*.
- Remove two cabinet top hold-down screws, and hinge cabinet top or remove, paragraph 25.
- Loosen hose clamp and disconnect filler hose from outer tub cover, *Figure 47*.

NOTE: When reinstalling filler hose, the white line on hose that connects to tub cover must be aligned with line located on top side of outer tub cover, *Figure 47*.

- 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, or helper spring, are overstretched, washer operation will be affected.

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

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

With idler spring and helper spring hooked to motor mounting bracket, the idler lever extends out through rear of bracket. When removing or reinstalling complete tub assembly, the 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 the idler pulley with the drive belt, and a chipped idler pulley will damage the belt.

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

- Using the No. 289P4 Spring Hook Tool, unhook the seven centering springs from lower edge of outer tub, *Figure 58*.

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

- Disconnect hose from bottom of outer tub.
- Remove pressure hose from pressure bulb. Then remove tape holding pressure hose to outer tub, *Figure 62*.
- Grasp outer tub and lift complete tub module assembly (with transmission, balance ring, and pivot dome attached) straight up and out of washer cabinet.
- Turn the complete tub module upside-down and set on protective padding.
- Remove screws holding the three support legs to the pivot dome and remove dome, *Figure 59*.
- Remove screw, washer and helix holding drive pulley to input shaft of transmission assembly, *Figure 60*.
- Lift drive pulley up and out from between tub support legs.

NOTE: When reinstalling pulley, place a small amount of No. 03200 Lubricant to the top side of the drive pulley that will be contacting the large flat washer. Lubricate the helix ramps and bore with a small amount of No. 03200 Lubricant. See *Figure 61*.

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

- Remove two large flat washers from transmission shaft, *Figure 61*.

IMPORTANT: The two large flat washers must be in place between spring and drive pulley when reassembling. The thicker washer must contact the top side of the drive pulley. See *Figure 61* for assembly sequence.

(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

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

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

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

NOTE: When reassembling, place a small amount of No. 03200 Lubricant to top side of drive pulley that will be contacting the large flat washer. Lubricate helix ramps and bore with a small amount of No. 03200 Lubricant. See *Figure 61*.

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

- q. Remove three screws and rubber sleeves holding brake pads to lower bearing housing, *Figure 61*.
- q. Lift brake assembly and pads off transmission tube.
- s. Remove three screws holding lower bearing housing to tub support legs, *Figure 61*.
- t. 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 housing. It may require tapping lightly on housing to loosen it from the transmission tube.

IMPORTANT: When installing the lower bearing housing, apply No. 27604P Anti-Seize compound to the area of the transmission tube that will be contacting the bearing, *Figure 63*.

TO REMOVE BEARING

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

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

34. TRANSMISSION ASSEMBLY

- a. Open loading door.
- b. To remove the agitator by hand, place two agitator hooks, No. 254P4P, under the bottom edge of the agitator, *Figure 15*.

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

- c. Using a rocking motion (back and forth) carefully lift the agitator off the drive bell.
- d. Remove two screws from bottom edge of front panel, *Figure 36*.
- e. Pull bottom of panel away from washer until hold-down clips (located on top flange of panel) disengage from slots in cabinet top, *Figure 36*.
- f. Remove two cabinet top hold-down screws, and hinge cabinet top or remove, paragraph 25.
- g. Loosen hose clamp and disconnect filler hose from outer tub cover, *Figure 47*.

NOTE: When reinstalling filler hose, the white line or hose that connects to tub cover must be aligned with line located on top side of outer tub cover, *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

- h. There are eight tub cover hold-down tabs which snap over the outer tub flange. Using the special tub cover tool, Part No. 273P4, insert the two prongs of the tool underneath each side of the tandem tabs, *Figure 47*. Tilt the tool toward the center of the 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 the outer tub flange and remove cover.
- i. Remove the cover from the outer tub and remove the old gasket from tub cover.

NOTE: When installing outer tub cover, always use a new cover gasket. Before installing the new gasket, clean and remove any foreign material that is in the gasket groove of the cover. The outer tub flange must also be cleaned.

Starting at the positioning pin that is located between the two bleach funnel outlets tabs, lay gasket into the gasket groove of the tub cover, *Figure 48*. Using the semi-curved end of the tub cover tool, Part No. 273P4, *Figure 48*, press against both tabs when installing gasket past the ends of hold-down tabs and to bottom of groove. One by one, insert gasket past tips of all eight hold-down tabs.

IMPORTANT: Care must be taken not to twist or bunch the gasket in any one area as this will cause a leak after assembly.

NOTE: Using your fingers, press gasket down into gasket groove between the hold-down tabs. The tool is designed to spread open the hold-down tabs thus preventing tearing of the gasket during installation of gasket into gasket groove in cover.

With the tub cover tilted at approximately a 45 degree angle, *Figure 49*, insert the positioning pin (on the tub cover) into the notch on the outer tub flange. The two bleach funnel outlets tabs must be angled downward toward the inside wall of the outer tub. This is required for proper dispensing of the bleach. Lower the cover down and starting at the hold-down tabs next to the positioning pin, push down firmly on top of the tab area until hold-down tab ends snap over edge of outer tub flange. This must be done with all eight hold-down tabs to ensure a water-tight seal between tub cover and outer tub flange.

The best assembly procedure is to start on one side, then cross over to the opposite side. Continue with this criss-cross pattern, until tub cover is fully seated. Visually check each tab area again to ensure that cover is seated.

Check whether or not the bleach funnel outlets tabs are in the down position by looking through the two square holes in the bleach funnel area of the tub cover. If tabs are not down, a small screwdriver can be inserted down through the holes in the bleach funnel area and the tabs can be bent into position.

- j. Remove four screws and washers holding washtub to hub, *Figure 50*.

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

- k. Grasp the top flange of the washtub and lift washtub (with clothes guard attached) out of outer tub.

IMPORTANT: When removing the washtub and clothes guard, **DO NOT** lift up on the guard as you could damage it.

- l. Remove agitator drive bell, paragraph 13.
m. Remove the large hex nut using a No. 237P4 Hex Wrench. Then remove spline insert from transmission tube, *Figure 51*.
n. Remove hub from splines on transmission tube.

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

- o. Remove old water seal from outer tub.

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

(continue)

▲ 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.**

NOTE: When reinstalling or replacing outer tub, we recommend installing a new No. 495P3 Hub and Seal Kit, paragraph 29.

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

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

- q. Using No. 289P4 Spring Hook Tool, unhook seven centering springs from lower edge of outer tub, *Figure 58*.

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

- r. Disconnect hose from bottom of outer tub.

IMPORTANT: Some water will always remain in outer tub. Therefore, before removing hose from pump, pinch off or drain the hose to prevent water spilling on the floor.

- s. Remove pressure hose from pressure bulb. Then remove tape holding the pressure hose to the outer tub, *Figure 62*.
- t. Grasp outer tub and lift complete tub assembly (with transmission, balance ring and pivot dome attached) straight up and out of washer cabinet.
- u. Turn outer tub upside-down and set on protective padding, *Figure 59*.
- v. Remove screws holding the three support legs to the pivot dome and remove dome, *Figure 59*. Then remove screw, washer and helix holding drive pulley to input shaft of transmission assembly, *Figure 60*.
- w. Lift drive pulley up and out from between the tub support legs.

NOTE: When reinstalling pulley, place a small amount of No. 03200 Lubricant to the top side of the drive pulley that will be contacting the large flat washer. Lubricate the helix ramps with a small amount of No. 03200 Lubricant. See *Figure 61*.

IMPORTANT: DO NOT OVER LUBRICATE!

Excess lubricant can be thrown into the pivot dome area during normal operation of the washer. Any lubricant on the pivot dome or snubber pad and isolator assembly will cause premature tripping of the out-of-balance switch. This condition will persist until the lubricant is removed.

- x. Using a right angle needle nose pliers, remove the spring from around the lower transmission tube (located inside the brake assembly), *Figure 61*.

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

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

- y. Remove screws holding each support leg to outer tub, *Figure 59*, then lift, brake assembly and lower bearing housing off transmission tube.

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 the area of transmission tube that will be contacting the bearing, *Figure 63*.

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

▲ 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

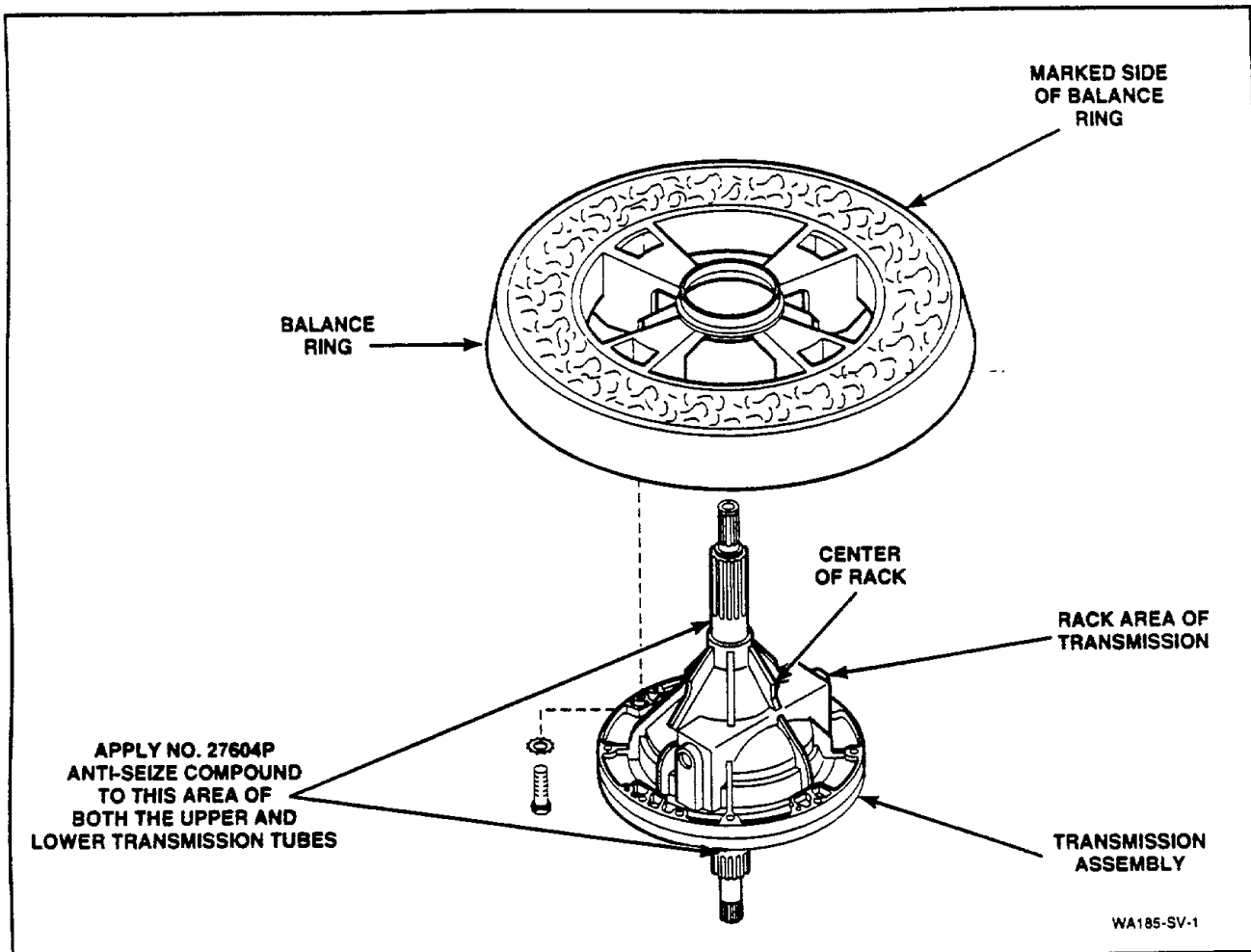


Figure 63

- z. Remove four screws and lockwashers holding the transmission assembly to balance ring, *Figure 63*, then lift transmission assembly straight up and out of balance ring and upper bearing.

IMPORTANT: When replacing or reinstalling the transmission assembly, it is important that No. 27604 Anti-Seize compound be applied to the area of the transmission tubes where they will be contacting the upper and lower bearings, *Figure 63*.

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 the center of the rack at 12 o'clock when viewed from top of transmission, *Figure 63*. Carefully lower transmission through balance ring and upper bearing. DO NOT DROP OR LOWER TRANSMISSION ASSEMBLY INTO POSITION TOO HARD, this can cause the bearing to move within the bearing housing which will cause vibration, noise, wear or no spin.

(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

TO DISASSEMBLE THE TRANSMISSION ASSEMBLY (Refer to *Figure 64* for assembly sequence).

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

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

- b. Before disassembling transmission halves, mark outer edge of transmission case and cover so the two can be reassembled in the same position.
- c. Place transmission in vise so three of the eight screws holding transmission case and cover together are in the 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. Completely remove remaining five screws and lockwashers.
- e. Remove transmission assembly from the vise.
- f. While holding transmission by the 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 the 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 the 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 the area inside cover tube (seals, bearing, roller clutch, etc.). If oil is present between the seals and bearing, or the roller clutch is bad, it will require replacing complete transmission cover assembly. The individual components are not available separately.

- k. Remove internal gear, slide and rack from transmission case.
- l. Remove transmission case from vise and drain the oil.
- m. Remove retainer ring from output shaft.
- n. Using a hammer and punch, carefully drive the shaft out of agitator pinion.
- o. Carefully remove output shaft and washer from transmission case.

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

TO REASSEMBLE THE TRANSMISSION ASSEMBLY

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

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

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

IMPORTANT: End of the shaft with the identification groove, *Figure 64*, must be facing outward. This is the end that will mate with the helix.

- j. Install drive pinion, flat washer, lockwasher and special screw onto the input shaft.

NOTE: Use a thread locking compound on the 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. 28434P Loctite, on the mating surface of the transmission case.

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

- 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 the two halves are aligned.
n. Carefully lower cover onto case.
o. Secure the two transmission halves together, using eight screws removed during disassembly. Tighten the eight screws evenly.
p. Remove complete transmission assembly from vise.
q. Apply Anti-Seize compound, No. 27604P, to the smooth area of both transmission tubes that will be contacting the upper and lower bearings, *Figure 63*.

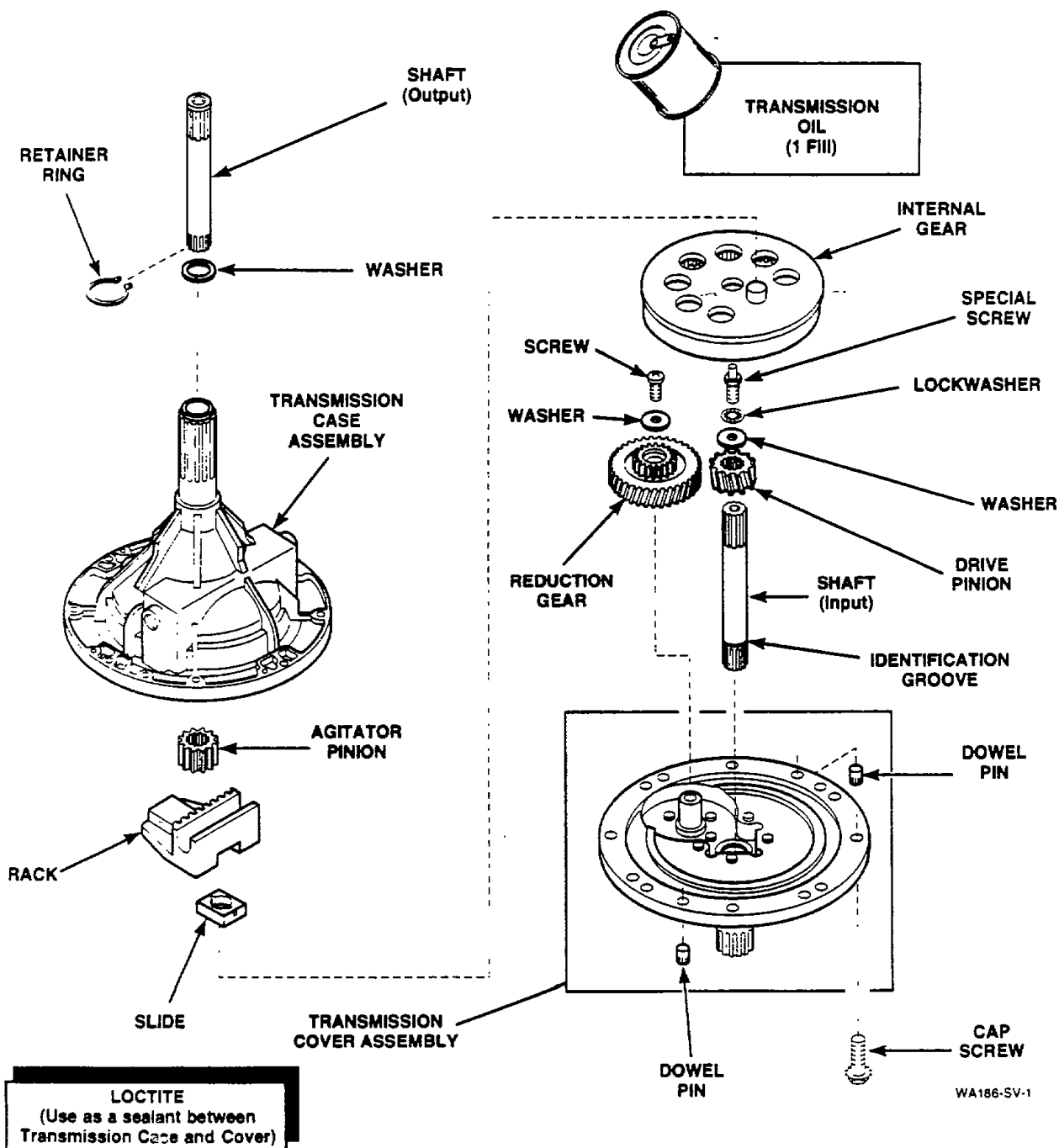


Figure 64

▲ WARNING

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

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

W003

35. BALANCE RING

- Remove transmission assembly, paragraph 34.
- Lift balance ring off outer tub.

IMPORTANT: When reinstalling the balance ring, note, if there is a mark located on the outer edge of the balance ring, this mark (if present) indicates the light side of the ring. This light side must be installed at a 9 o'clock position with the center of the rack at 12 o'clock when viewed from top of transmission, *Figure 63*.

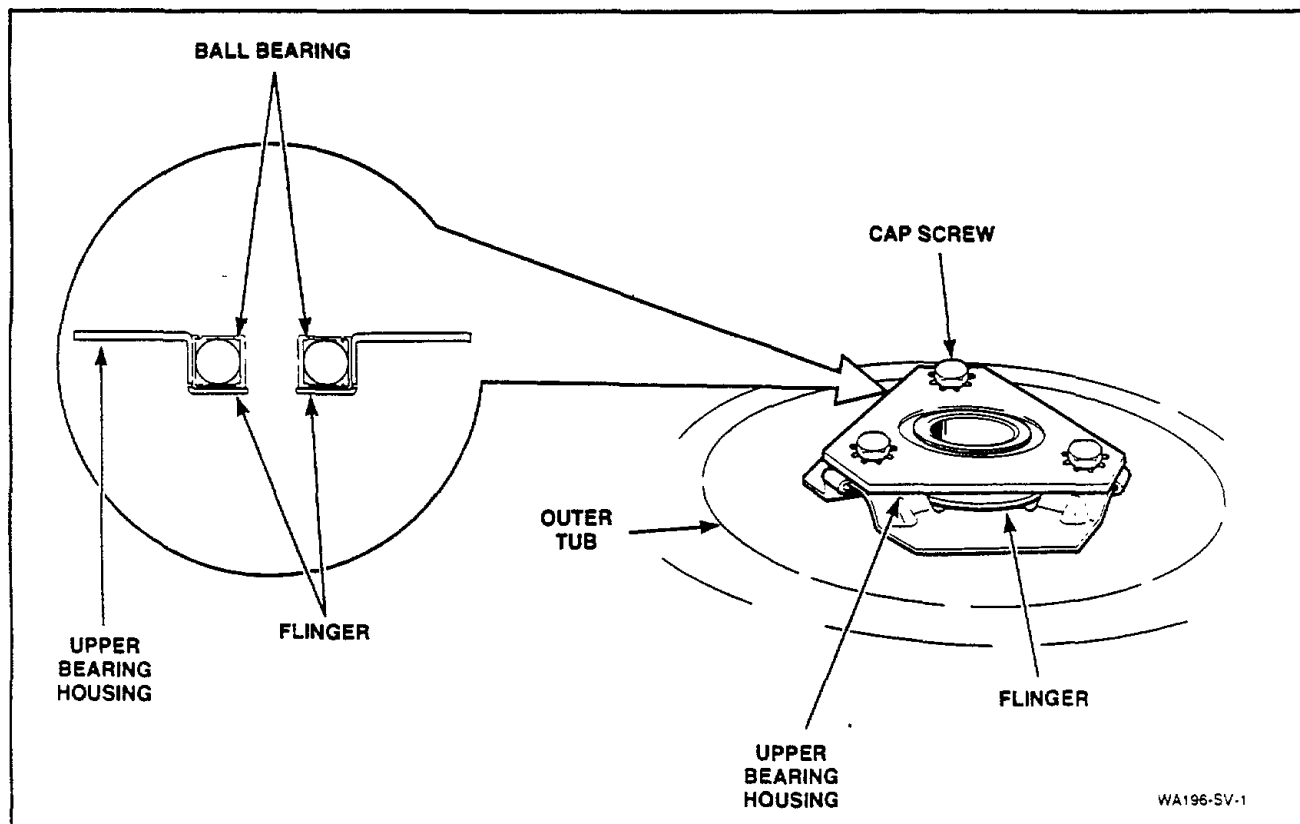
36. UPPER BEARING ASSEMBLY

- Remove transmission assembly, paragraph 34, steps "a" through "x".
- Remove screws holding each support leg to outer tub, *Figure 59*.
- 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. (The plate must be installed on the outside of tub flange). Do not overtighten screws as this could cause stripping or porcelain damage. Torque screws between 90 to 130 inch pounds.

- Remove three screws holding upper bearing and housing to bottom of outer tub, *Figure 65*.

NOTE: Replace bearing and housing as an assembly, and be sure flinger is properly positioned between the outer tub and bearing assembly, *Figure 65*.



WA196-SV-1

Figure 65

▲ 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.

WOOD

37. SNUBBER PAD AND ISOLATOR ASSEMBLY

- Remove outer tub, paragraph 30, steps "p" through "v".
- Locate the split end of the snubber pad and isolator assembly and using a flat blade screwdriver, carefully unsnap the assembly from the pivot dome area of the washer base, *Figure 66*.

TO INSTALL NEW SNUBBER PAD AND ISOLATOR ASSEMBLY

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

NOTE: Check to make sure all pins on the isolator strip are snapped and seated in place.

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

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

NOTE: Be 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, *Figure 58*.

IMPORTANT: When installing the centering springs, make sure the spring hooks are fully seated in the hole in the base and in the tub skirt, *Figure 58*.

- Connect hose to bottom of outer tub, tighten hose clamp.
- Reconnect idler spring to the clip on motor mounting bracket, and the helper spring into back hole in mounting bracket, *Figure 29*.
- 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 67*. Then route the pressure hose back up through the hole in the cabinet top.
- Reconnect filler hose to tub cover, *Figure 47*.

NOTE: When reinstalling the filler hose, the white line on hose that connects to tub cover must be aligned with line located on top side of outer tub cover, *Figure 47*. Make sure the hose is in its natural position (not kinked or twisted). If it is not, loosen hose clamp and straighten the hose.

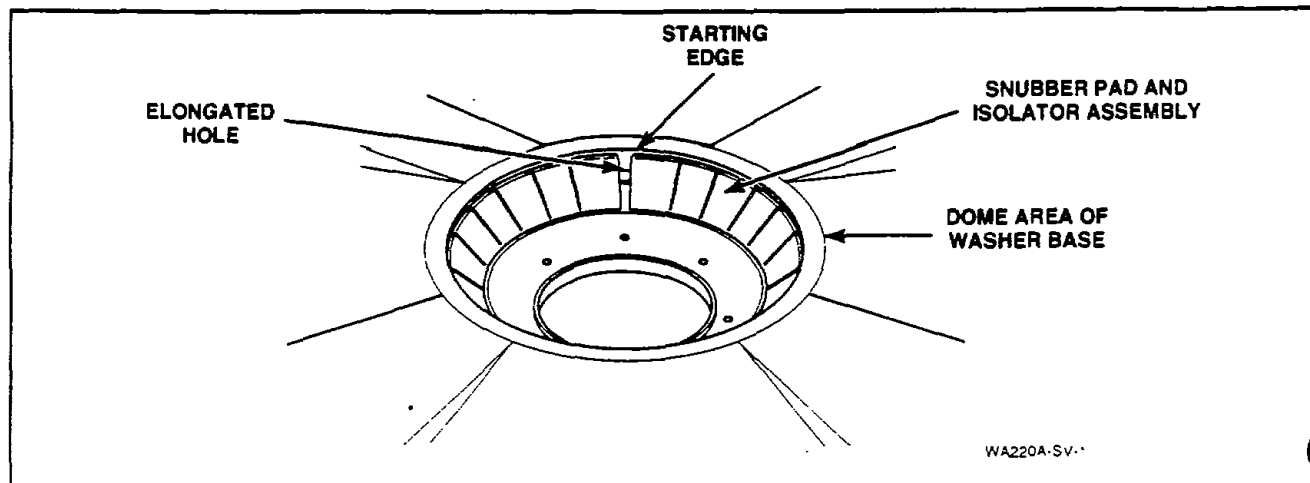


Figure 66

▲ WARNING

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

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

W003

- j. Reinstall cabinet top.
- k. Remove control panel, reconnect pressure hose to pressure switch. Then reinstall control panel.
- l. Reinstall washer front panel.
- m. 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.

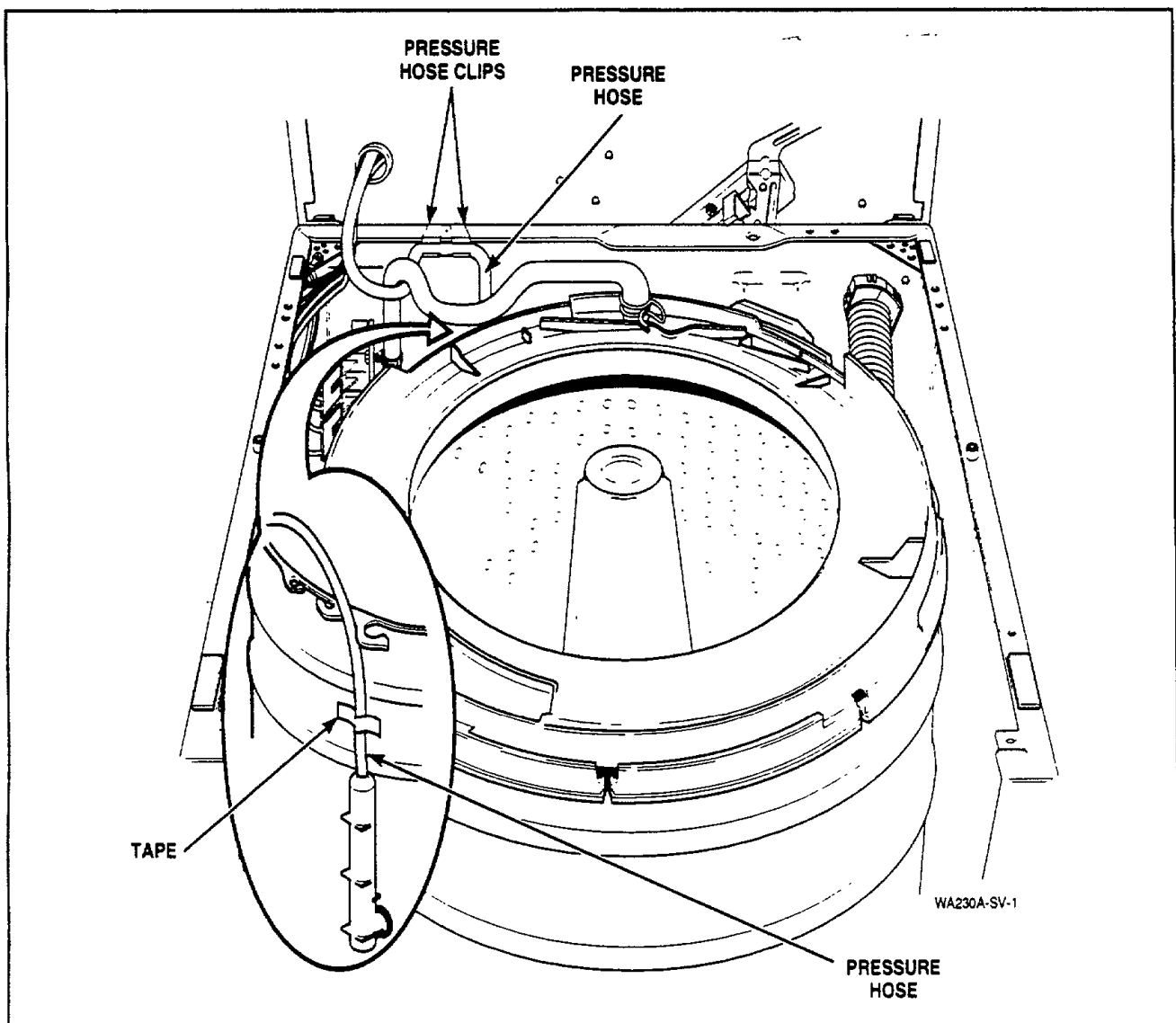


Figure 67

SECTION III

Adjustments

38. LEVELING LEGS (Refer to Figure 68)

- Place rubber feet on all four leveling legs.
- Place washer in position on a clean, dry, and reasonably firm floor.
- Loosen locknuts and adjust the two front leveling legs. Once adjusted, tilt the unit forward on front legs and lower back down into position to set the 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.

NOTE: Improper installation or flexing of a weak floor will cause excessive vibration.

IMPORTANT: Do not slide washer across floor once the leveling legs have been extended, as legs and base could become damaged.

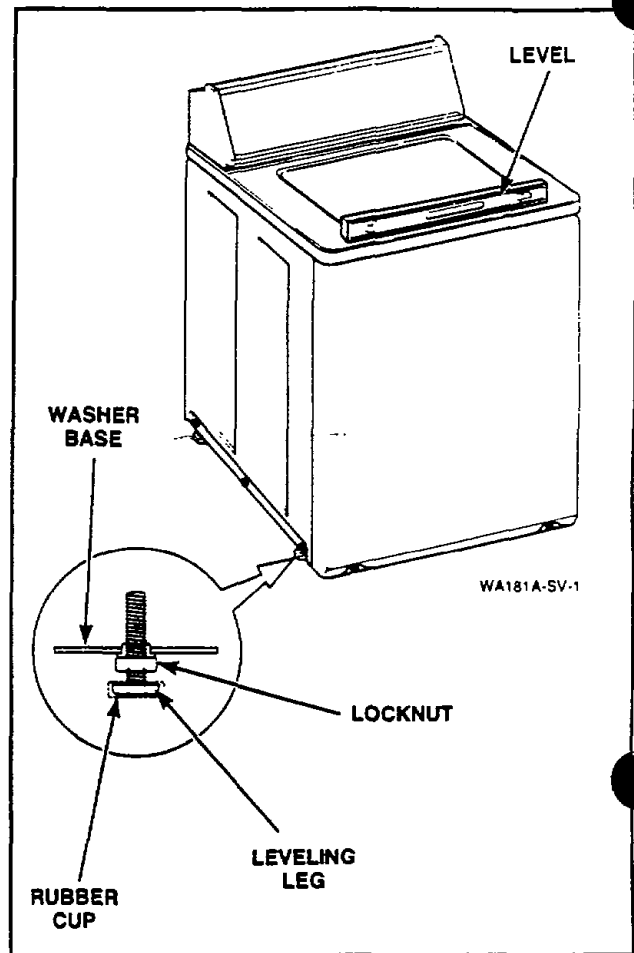


Figure 68

▲ 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.

WDC3

39. PRESSURE SWITCH (Refer to Figure 69)

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

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

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

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

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

40. BELT (Agitate and Spin)

No belt adjustment is required.

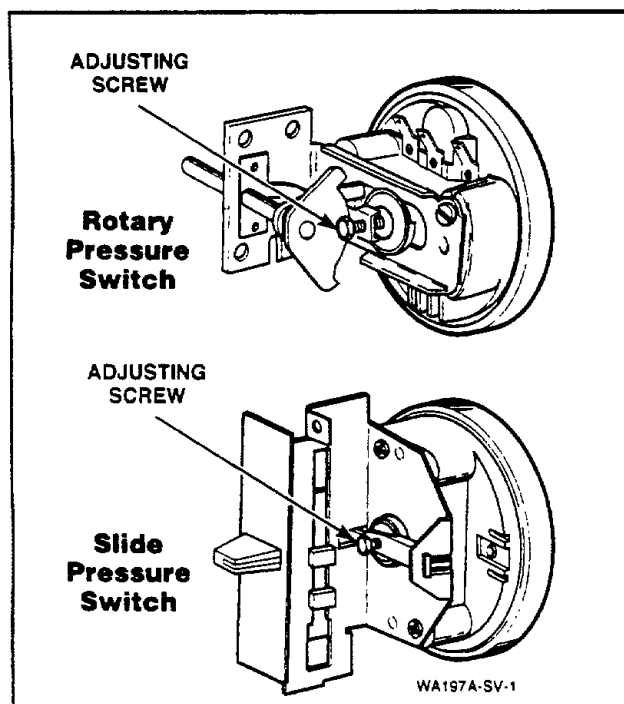


Figure 69

41. BELT — Pump

- Remove two screws from bottom edge of front panel, *Figure 36*.
- Pull bottom of panel away from washer until hold-down clips (located on top flange of panel) disengage from slots in cabinet top.
- Loosen front mounting screw, *Figure 70*, then loosen the two rear screws.
- Shift front of pump mounting bracket to the right or left to obtain proper belt tension. Proper tension is when belt can be deflected approximately one half inch (12.7 mm) from its normal position by applying moderate pressure (one and one half pounds — .675 kg) to a point midway between pulleys, *Figure 71*.
- After belt tension is obtained, tighten pump attaching screws, *Figure 70*.

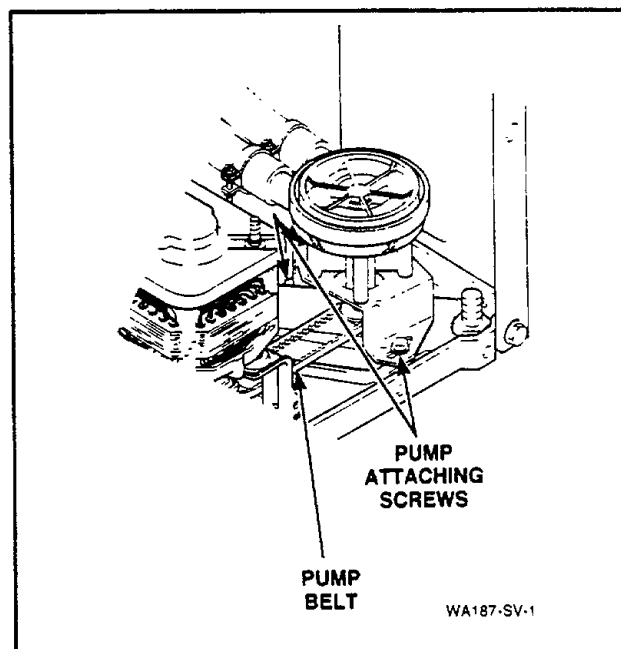


Figure 70

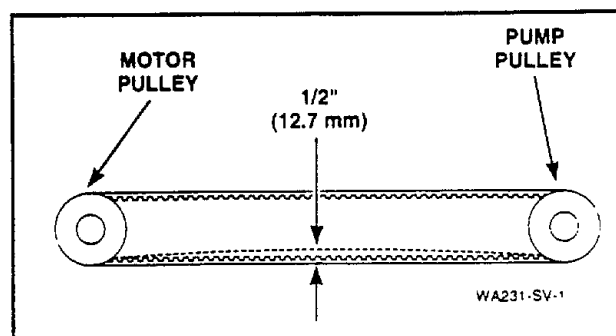


Figure 71

▲ 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. OUT-OF-BALANCE SWITCH

- Remove two screws from bottom edge of front panel, *Figure 36*.
- Pull bottom of panel away from washer until hold-down clips (located on top flange of panel) disengage from slots in cabinet top, *Figure 36*.
- Hinge or remove cabinet top, paragraph 25.
- Check for bent actuator arm or lever, *Figure 72*.

IMPORTANT: If the switch lever repeatedly trips the out-of-balance switch, check the centering of the agitator within the loading door opening. If the tub module is not centered within the opening, centering spring(s) may have been overstretched. Replace the necessary spring(s) and recheck the centering, *Figure 73*.

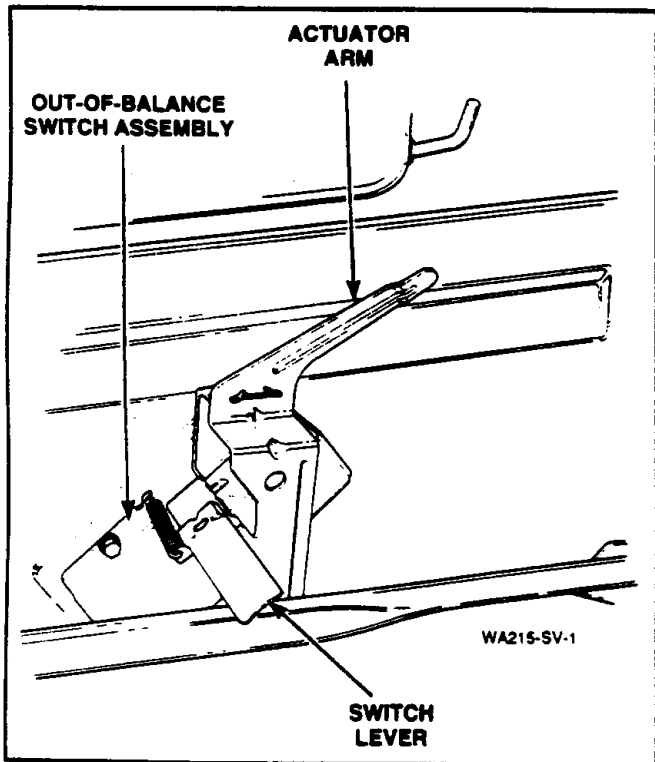


Figure 72

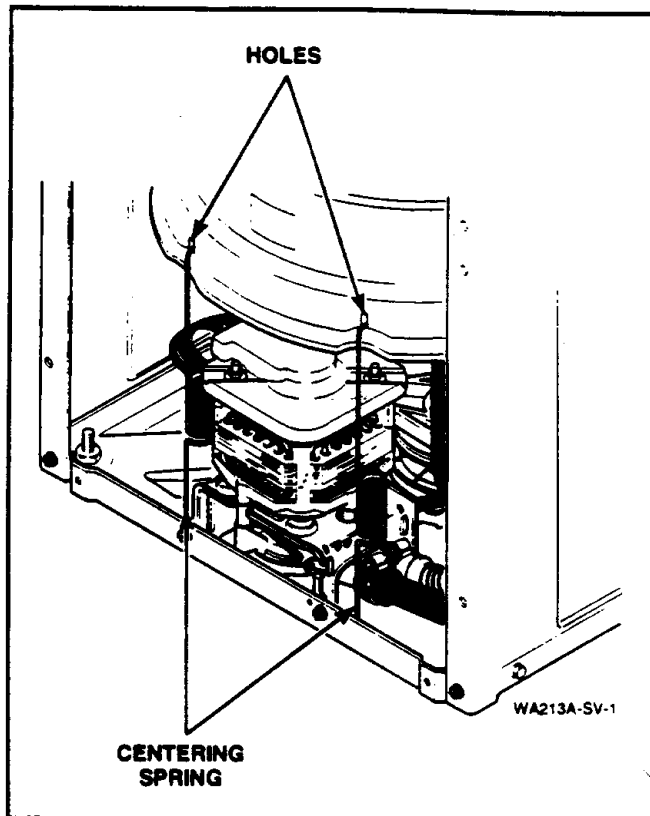


Figure 73

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.

43. NO HOT WATER

POSSIBLE CAUSE	TO CORRECT
Hot water supply faucet and/or tap is closed.	Open faucet and/or tap.
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 or tap.	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.
† Inoperative electronic control.	Refer to SECTION VI to check out the electronic control operation.

44. NO COLD WATER

POSSIBLE CAUSE	TO CORRECT
Cold water supply faucet and/or tap is closed.	Open faucet and/or tap.
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 or tap.	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.
† Inoperative electronic control.	Refer to SECTION VI to check out the electronic control operation.

*Mechanical Timer Models only.

† Electronic Control Models only.

▲ WARNING

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

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

W003

45. NO WARM WATER

POSSIBLE CAUSE	TO CORRECT
No hot water.	Refer to paragraph 43.
No cold water.	Refer to paragraph 44.

46. 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. Replace deteriorated or not-easily-cleaned components.
Broken, weak, or missing mixing valve armature spring.	Disassembly valve and replace spring.
A siphoning action started in washer will cause water to be siphoned from the washer during the cycle due to the end of the drain hose being lower than cabinet top of washer. Drain hose fits tight in standpipe or drain.	Install No. 297P3 Siphon Break Kit (for rubber drain hose) or No. 386P3 Siphon Break Kit (for plastic drain hose). 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.
† Inoperative electronic control.	Refer to SECTION VI to check out the electronic control operation.

47. TIMER DOES NOT ADVANCE (Mechanical Timer Models only)

POSSIBLE CAUSE	TO CORRECT
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 MUST be closed any time the washer is to agitate or spin.
Washer will not fill.	Timer pauses until pressure switch is satisfied. Refer to paragraphs 43 and 44.
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.

*Mechanical Timer Models only.

† Electronic Control Models only.

▲ 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. MOTOR DOES NOT RUN

POSSIBLE CAUSE	TO CORRECT
Electrical power off, fuse blown, or power cord not plugged in.	Has the laundry room fuse(s) blown or become loosened, or are circuit breakers open? The 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.	Refer to SECTION V to check start switch and start windings.
Motor is dead, won't run.	Refer to SECTION V to check switch and windings.
Motor overload protector has cycled.	Wait two or three minutes for overload protector to reset. If protector cycles repeatedly, refer to paragraph 51.
Bind in upper or lower motor bearing.	Remove belts 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 the correct wiring.
† Inoperative electronic control.	Refer to SECTION VI to check out the electronic control operation.

*Mechanical Timer Models only.

† Electronic Control Models only.

▲ WARNING

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

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

W003

49. NO AGITATION

POSSIBLE CAUSE	TO CORRECT
*Inoperative timer. Timer is designed to pause (SCAK) during the DELICATE cycle.	Test timer and replace if inoperative.
Motor will not run.	Refer to SECTION V to check switch and windings.
No Delicate cycle agitate.	Refer to SECTION V to check low speed switch and windings.
Inoperative pressure switch.	Test switch and replace if inoperative.
Broken, loose, or incorrect wiring.	Refer to appropriate wiring diagram.
Loose or broken drive belt.	Adjust or replace belt.
Inoperative transmission assembly.	Repair or replace the transmission assembly.
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 51.
Bind in pump.	Replace pump.
Loading door is open or door switch is inoperative.	Close door or test switch and replace if inoperative.
† Inoperative electronic control.	Refer to SECTION VI to check out the electronic control operation.

50. 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 the transmission assembly.
† Inoperative electronic control.	Refer to SECTION VI to check out the electronic control operation.

*Mechanical Timer Models only.

† Electronic Control Models only.

▲ WARNING

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

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

W003

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

POSSIBLE CAUSE	TO CORRECT
The belt is tacky and does not allow proper slip.	Check belt and replace if defective.
The belt tension is too great and does not allow proper slip.	Make sure idler and helper springs are properly connected.
*Inoperative timer.	Test timer and replace if inoperative.
Motor switch functions inoperative.	Refer to SECTION V to check switch functions.
Bind in water pump.	Replace pump.
Brake pads binding.	Free binding pads, or replace pads.
The 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 the local utility company, or have a qualified electrician check the power supply.

52. SLOW SPIN OR NO SPIN

POSSIBLE CAUSE	TO CORRECT
*Inoperative timer.	Test timer and replace if inoperative.
Some model washers, the timer is programmed for SLOW spin in the DELICATE CYCLE.	Use a different cycle.
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.
Loose or broken drive belt.	Adjust or replace belt.
Washer has gone OUT-OF-BALANCE. LED (Light Emitting Diode) is flashing on the electronic control.	Open loading door to reset OUT-OF-BALANCE switch. Rearrange the load in the washtub.
Motor will not run.	Refer to MOTOR TEST SECTION V to check switch and windings.
Sheared motor pulley roll pin.	Remove drive motor and appropriately 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 51.
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 the transmission assembly.
Inoperative electronic control.	Refer to SECTION VI to check out the electronic control operation.

*Mechanical Timer Models only.

* Electronic Control Models only

▲ 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.

WCC

53. CONSTANT SPIN

POSSIBLE CAUSE	TO CORRECT
*Inoperative timer.	Test timer and replace if inoperative.
Washtub does not stop spinning within seven seconds after the 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.
† Inoperative electronic control.	Refer to SECTION VI to check out the electronic control operation.

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

POSSIBLE CAUSE	TO CORRECT
The belt is tacky and does not allow proper slip.	Check belt and replace if defective.
The belt tension is too great and does not allow proper slip.	Make sure idler and helper springs are 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 51.
Motor switch functions inoperative.	Refer to SECTION V to check switch functions.
The brake, transmission, or motor have locked up and will not turn.	Check that all these components are able to move freely.

55. WASHER IS LOCKED UP OR BINDING

POSSIBLE CAUSE	TO CORRECT
Excessive belt tension.	Adjust belts.
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 the local utility company, or have a qualified electrician check the power supply.

*Mechanical Timer Models only.

† Electronic Control Models only.

▲ 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.**

W0003

56. OUTER TUB DOES NOT EMPTY

POSSIBLE CAUSE	TO CORRECT
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.

57. EXCESSIVE VIBRATION

POSSIBLE CAUSE	TO CORRECT
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 35.

58. WATER LEAKING FROM OUTER TUB

POSSIBLE CAUSE	TO CORRECT
Leaking water seal in outer tub.	Replace hub and seal kit assembly, paragraph 29.
Hole in outer tub.	Replace outer tub.
Pressure hose or accumulator leaking.	Replace pressure hose and/or accumulator.
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.

*Mechanical Timer Models only.

† Electronic Control Models only.

NOTES

Lined area for notes, featuring horizontal ruling lines and three binder holes on the right side.

SECTION V

Test 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

EMERSON MOTOR SWITCH

NOTE: Refer to SECTION VIII for Internal Wiring of the Washer Motor Switch.

▲ WARNING

Disconnect electric power to washer before performing the following steps, or when replacing the switch.

START TERMINALS

A. CONTINUITY EXISTS BETWEEN
SWITCH TERMINAL R
AND RED WIRE

NO

YES

B. MANUALLY DEPRESS ACTUATOR.
CONTINUITY BROKEN BETWEEN
SWITCH TERMINAL R
AND RED WIRE.

NO

DEFECTIVE START SWITCH.
REPLACE SWITCH.

YES

HIGH SPEED TERMINALS

C. CONTINUITY EXISTS BETWEEN
SWITCH TERMINAL P
AND BLUE WIRE.

NO

YES

D. MANUALLY DEPRESS ACTUATOR.
CONTINUITY BROKEN BETWEEN
SWITCH TERMINAL P
AND BLUE WIRE.

NO

DEFECTIVE HIGH SPEED SWITCH.
REPLACE SWITCH.

YES

LOW SPEED TERMINALS

E. CONTINUITY BROKEN BETWEEN
SWITCH TERMINAL P
AND VIOLET WIRE.

NO

YES

F. MANUALLY DEPRESS ACTUATOR.
CONTINUITY EXISTS BETWEEN
SWITCH TERMINAL P
AND VIOLET WIRE.

NO

DEFECTIVE LOW SPEED SWITCH.
REPLACE SWITCH.

YES

MOTOR SWITCH
CHECKS OK.

▲ 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.

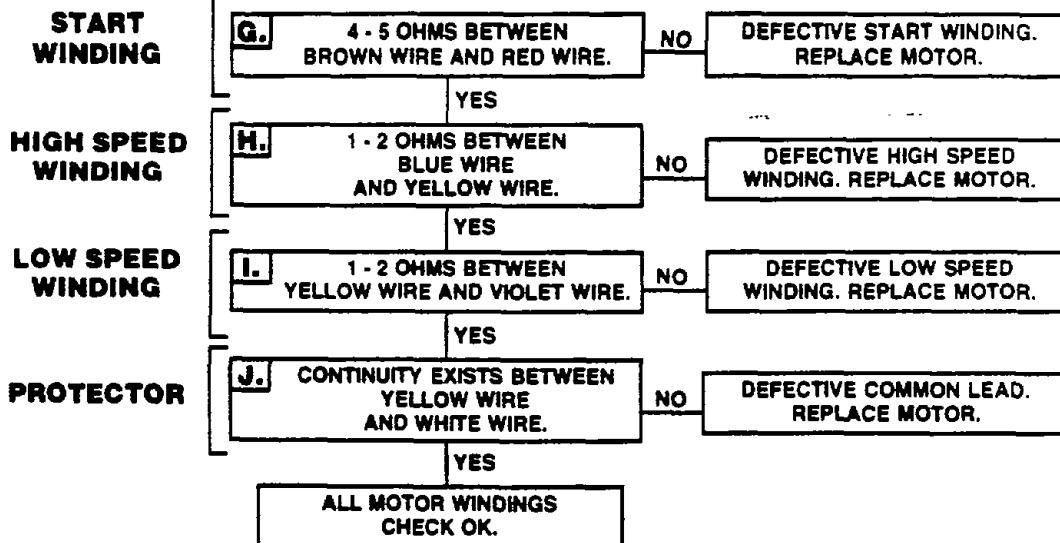
W003

EMERSON MOTOR WINDINGS

NOTE: Refer to SECTION VIII for Internal Wiring of the Washer Motor Switch.

▲ WARNING

Disconnect electric power to washer before performing the following steps, or when replacing the motor.



===== INDICATE WHETHER YES, THE MOTOR PASSED THIS TEST OR, NO IT FAILED THIS TEST =====

☐ **Y** YES ☐ **N** NO

Washer Motor Failure**MOTOR SWITCH**

Start Terminals:

☐ A.☐ B.

High Speed Terminals:

☐ C.☐ D.

Low Speed Terminals:

☐ E.☐ F.**MOTOR WINDINGS**

Start Winding:

☐ G.

High Speed Winding:

☐ H.

Low Speed Winding:

☐ I.

Protector/Common Lead:

☐ J.

SECTION VI

Service Procedures Unique to the Electronic Control Model Washers

▲ 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

59. ELECTRICAL REQUIREMENTS

(115 Volt, 60 Hertz,
with 3-prong Grounding Plug)

NOTE: The wiring diagram is located in the control hood.

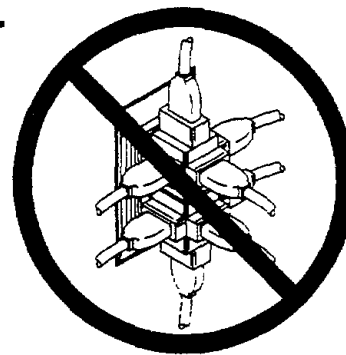
- The three-prong grounding plug on the power cord should be plugged directly into a polarized three-slot effectively grounded receptacle rated 110/115 Volts AC (alternating current), *Figure 74*.
- Do not operate other appliances on the same circuit. Do not overload circuits! See *Figure 75*.

▲ WARNING

To reduce the risk of fire, electric shock, serious injury or death, all wiring and grounding to the washer **MUST** conform with the latest edition of the National Electrical Code, ANSI/NFPA No. 70, and such local regulations as might apply. IT IS THE CUSTOMER'S RESPONSIBILITY TO HAVE THE WIRING AND FUSES CHECKED BY A QUALIFIED ELECTRICIAN TO MAKE SURE YOUR HOME HAS ADEQUATE ELECTRICAL POWER TO OPERATE THE WASHER.

INCORRECT

DO NOT
OVERLOAD
CIRCUITS



WA188-SV-1

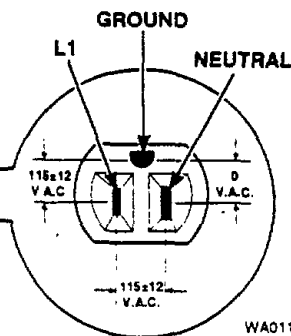
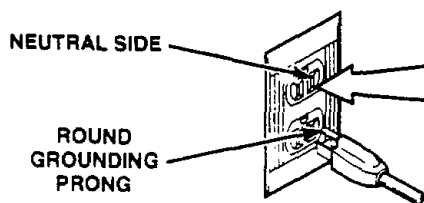
Figure 75

- The washer is designed to be operated on a separate branch, polarized, three-wire, effectively grounded, 115 Volt, 60 Hertz, AC (alternating current), single phase electrical circuit protected by a **15 or 20 ampere** fuse, equivalent fusetrone or circuit breaker.

▲ WARNING

To reduce the risk of an electric shock, serious injury, death or fire, **DO NOT** use an extension cord or an adapter to connect the washer to the electrical power source.

STANDARD
115 VOLT, 60 HERTZ, A.C.
3-WIRE EFFECTIVELY
GROUNDED CIRCUIT



WA011-GD-1

NOTE: A qualified electrician should check the polarity of the wall receptacle. If a voltage reading is measured, other than that illustrated, the qualified electrician should correct the problem.

Figure 74

▲ 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

60. GROUNDING INSTRUCTIONS

- The washer must be grounded. In the event of malfunction or breakdown, grounding will reduce the risk of electric shock by providing a path of least resistance for electric current. The washer is equipped with a cord having an equipment-grounding conductor and a three-prong grounding plug. The plug must be plugged into an appropriate outlet that is properly installed and grounded in accordance with all local codes and ordinances.

▲ WARNING

Improper connection of the equipment-grounding conductor can result in a risk of electric shock, serious injury or death. Check with a qualified electrician or serviceman if you are in doubt as to whether the washer is properly grounded.

- Do not modify the plug provided with the washer — if it will not fit the outlet, have a proper outlet installed by a qualified electrician.
- If a positive ground cannot be established through the power cord and local code permits its use, connect an external ground wire (18 gauge minimum — available at your local hardware store). Connect one end of the wire under any screw (located at rear of washer) and other end to a known effective electrical ground.
- If your home's electrical supply does not meet the above specifications and/or if you are not sure your home has an effective ground, have a qualified electrician, or your local electrical utility company check it and correct any problems.

61. WASHERS EQUIPPED WITH ELECTRONIC CONTROL

After connecting the washer to the electrical supply, start the washer (refer to the OPERATING INSTRUCTIONS supplied with the washer).

▲ WARNING

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

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

W003

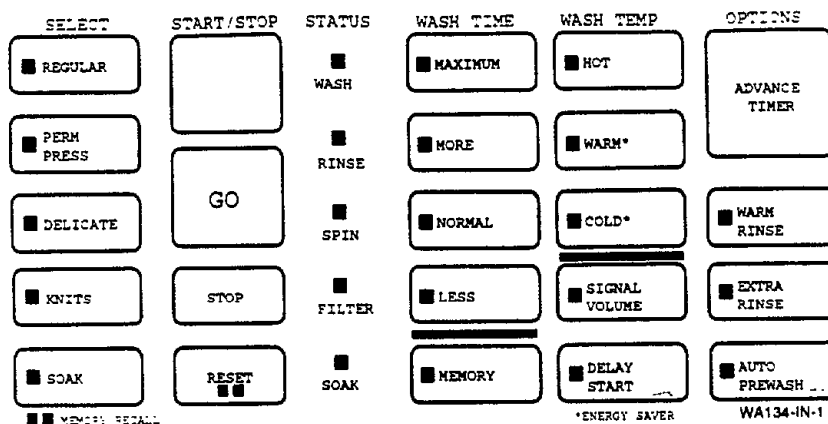


Figure 76

62. TROUBLESHOOTING ELECTRONIC CONTROL

IMPORTANT: This procedure is intended to be used as an aid in diagnosing potential problems with the electronic control, *Figure 76*. Refer to SECTION IV (Service Helps) for diagnosing problems with components other than the electronic control. See *Figure 77* for terminal numbers, connections and color coding.

63. DIAGNOSTIC CYCLE

A diagnostic cycle is built into the electronic control, to detect internal problems on the printed circuit board of the control.

IMPORTANT: The diagnostic cycle is not intended to diagnose any components built into the control (i.e. relays, transformer, or capacitors).

The diagnostic cycle is used in conjunction with a self-diagnostic routine chart located on the wiring diagram sticker. To begin the diagnostic cycle, follow the flow chart, *Figure 78*.

NOTE: If the symptom or problem corresponds to one of the symptoms detailed on the following pages, proceed to that flow chart. (The diagnostic cycle chart check does not have to be made.)

Self-Diagnostic Routine

Entry: Follow the sequence given below.

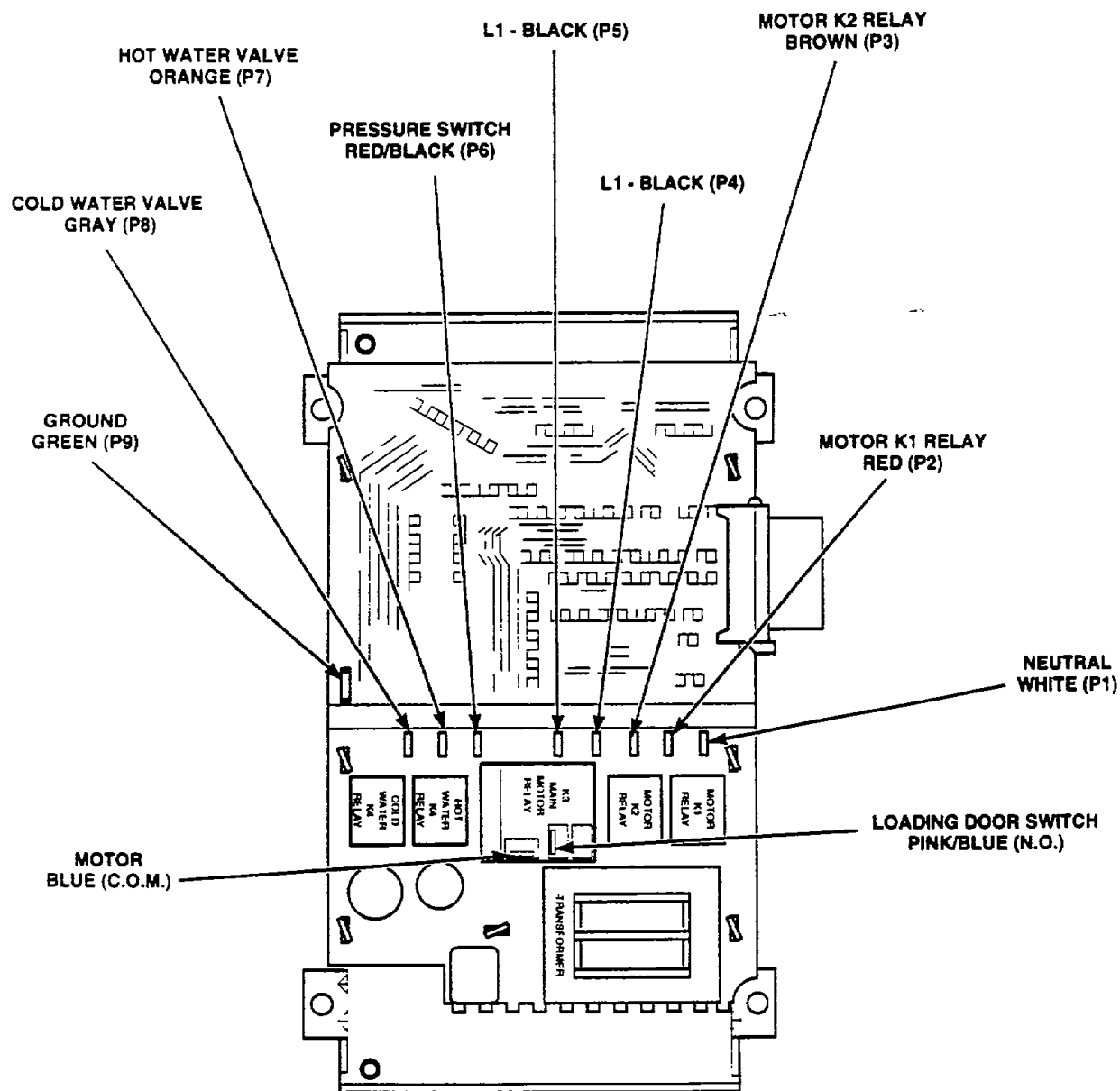
1. Make sure loading door is closed.
2. Start in the idle mode, all LED's (Light Emitting Diodes) off.
3. Press COLD pad down and hold.
4. Now press the PERM PRESS pad down and release all pads when sequence starts.
5. If unable to start routine, check loading door switch.

Exit: Do any of the following.

1. Press any pad.
2. Open the loading door for four seconds.
3. Unplug the washer.

NOTE:

1. This test routine will only light the LED's (Light Emitting Diodes) pertaining to the hardware model selected. The LED lights are located to the left of the SELECT cycle and OPTIONS pads, *Figure 76*.
2. When the last step in the table is finished, the routine sequence will repeat.
3. Each output is on for two seconds.



WA232-SV-1

**Connection Relay and Transformer Diagram
(Electronic Control)**

Figure 77

▲ 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

Diagnostic Routine

Time Display	Active LED's	Motor Direction	Motor Relay	Hot Water	Cold Water	Signal
99	Wash	Agitate	Off	Off	Off	Off
88	Rinse	Agitate	Off	Off	Off	Off
77	Soak	Agitate	Off	Off	Off	Off
66	Spin	Agitate	Off	Off	Off	Off
55	Delay Start	Agitate	Off	Off	Off	Off
44	Memory	Agitate	Off	Off	Off	Off
33	Auto Prewash	Agitate	Off	Off	Off	Off
22	Extra Rinse	Agitate	Off	Off	Off	Off
11	Signal Volume	Agitate	Off	Off	Off	Off
00	Filter	Agitate	On	On	Off	Off
99	Less	Agitate	Off	Off	Off	Off
88	Normal	Agitate	Off	Off	Off	Off
77	More	Agitate	Off	Off	Off	Off
66	Maximum	Agitate	Off	Off	Off	Off
55	Warm	Agitate	Off	Off	Off	Off
44	Hot	Agitate	Off	Off	Off	Off
33	Cold	Agitate	Off	Off	Off	Off
22	*	Agitate	Off	Off	Off	Off
11	*	Agitate	Off	Off	Off	Off
00	*	Agitate	Off	Off	Off	Off
99	Warm Rinse	Agitate	Off	Off	Off	Off
88	Soak	Agitate	Off	Off	Off	Off
77	Knits	Agitate	Off	Off	Off	Off
66	Delicates	Agitate	Off	Off	Off	Off
55	Perm Press	Agitate	Off	Off	Off	Off
44	Regular	Agitate	Off	Off	Off	Off
33	*	Spin	Off	Off	On	Off
22	*	Spin	On	Off	Off	Off
11	*	Spin	Off	Off	On	On

* None (All Off)

Figure 78

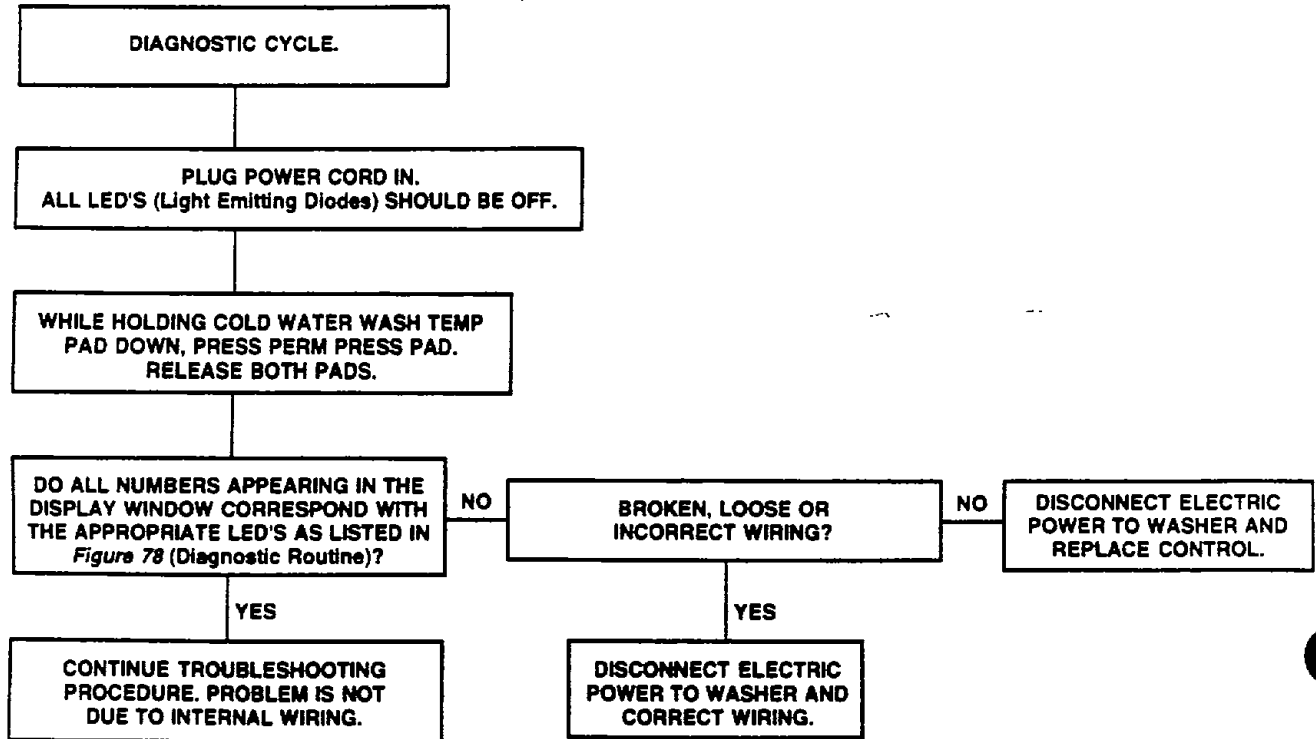
▲ WARNING

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

64. FAILURE SYMPTOMS



NOTE: If, when trying to start Diagnostic Cycle, LED (Light Emitting Diodes) display flashes but does not start, check the following:

1. Is loading door closed?
2. Loading door switch operating properly?
3. Is motor correctly connected and is it not cycled on the thermal overload protector?

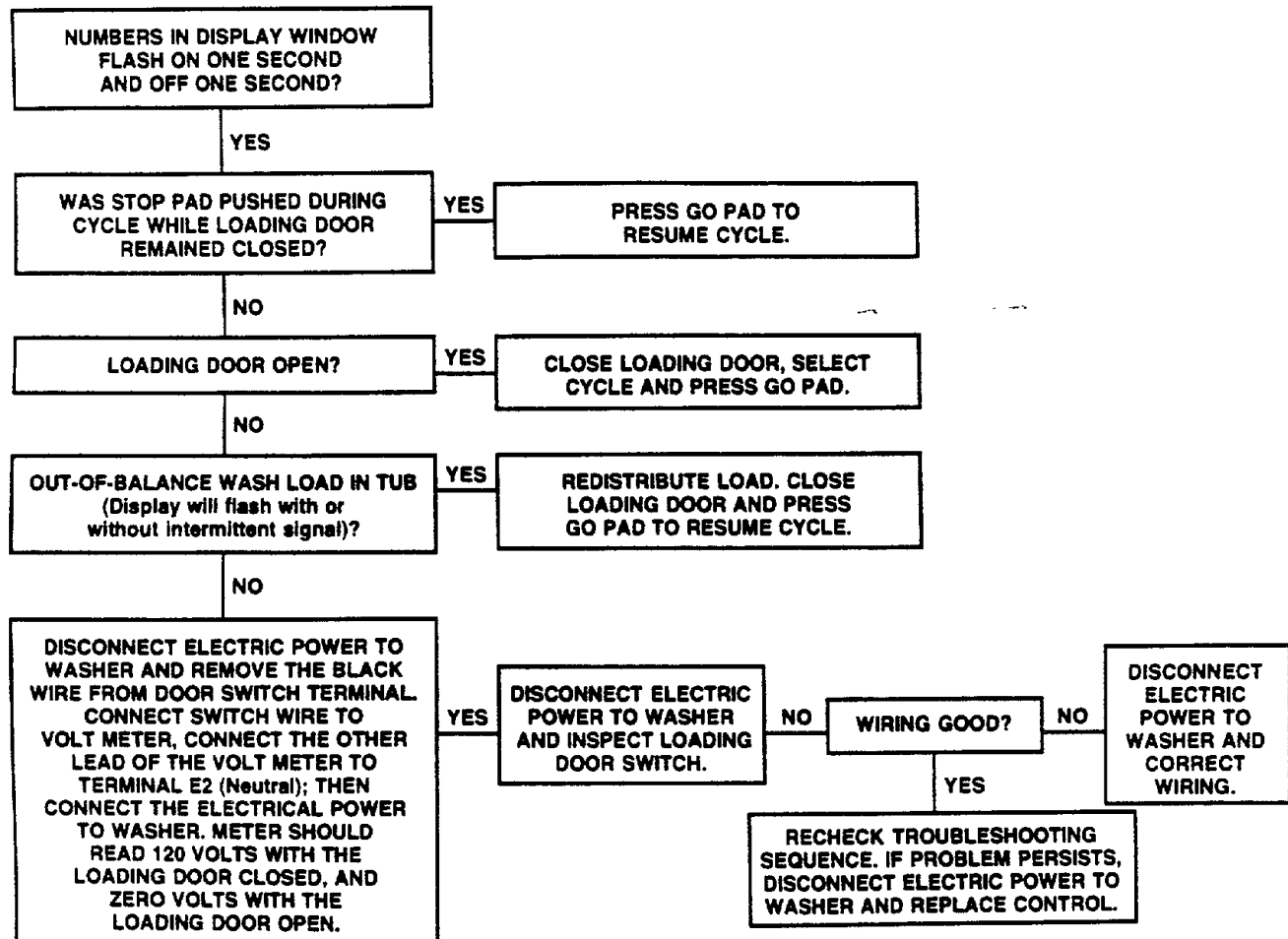
▲ WARNING

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.**

W303

65. SYMPTOM: FLASHING DISPLAY



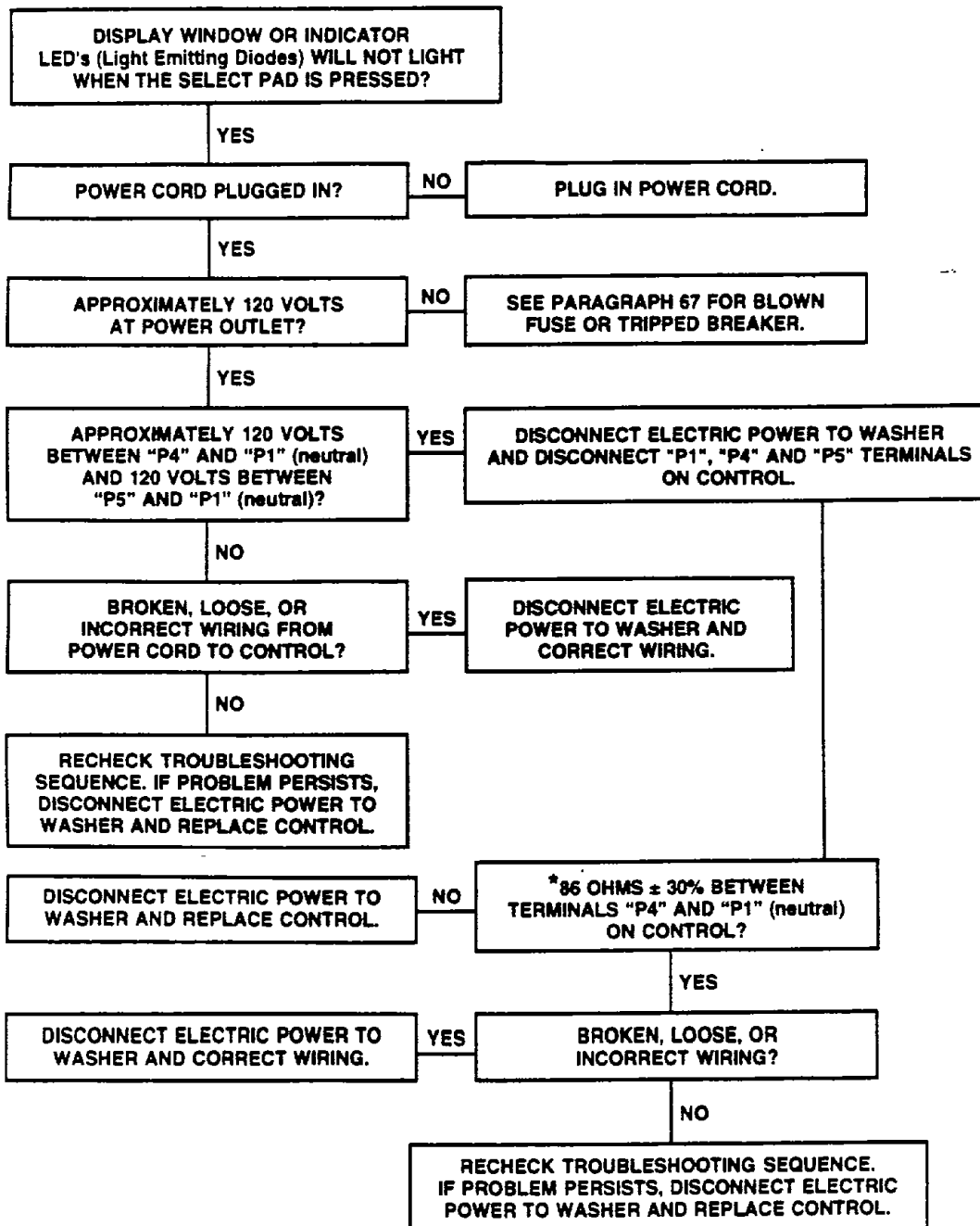
▲ WARNING

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

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

W003

66. SYMPTOM: INDICATOR LED's (Light Emitting Diodes) WILL NOT LIGHT WHEN SELECT PAD IS PRESSED



* For best precision, this measurement must be taken with a digital multi-meter set on the 200 Ohm scale.

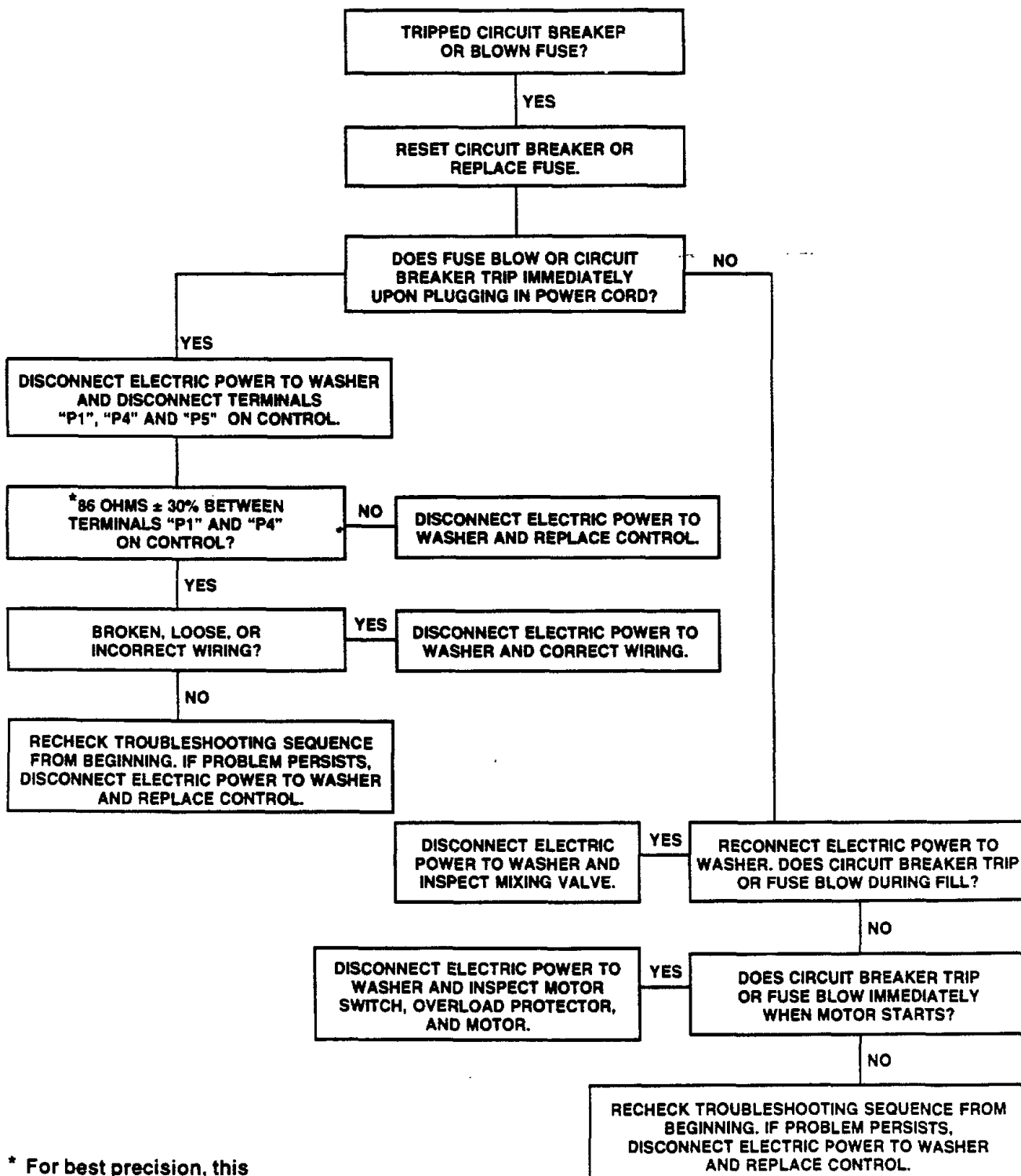
▲ WARNING

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

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

W003

67. SYMPTOM: TRIPPED CIRCUIT BREAKER OR BLOWN FUSE



* For best precision, this measurement must be taken with a digital multi-meter set on the 200 Ohm scale.

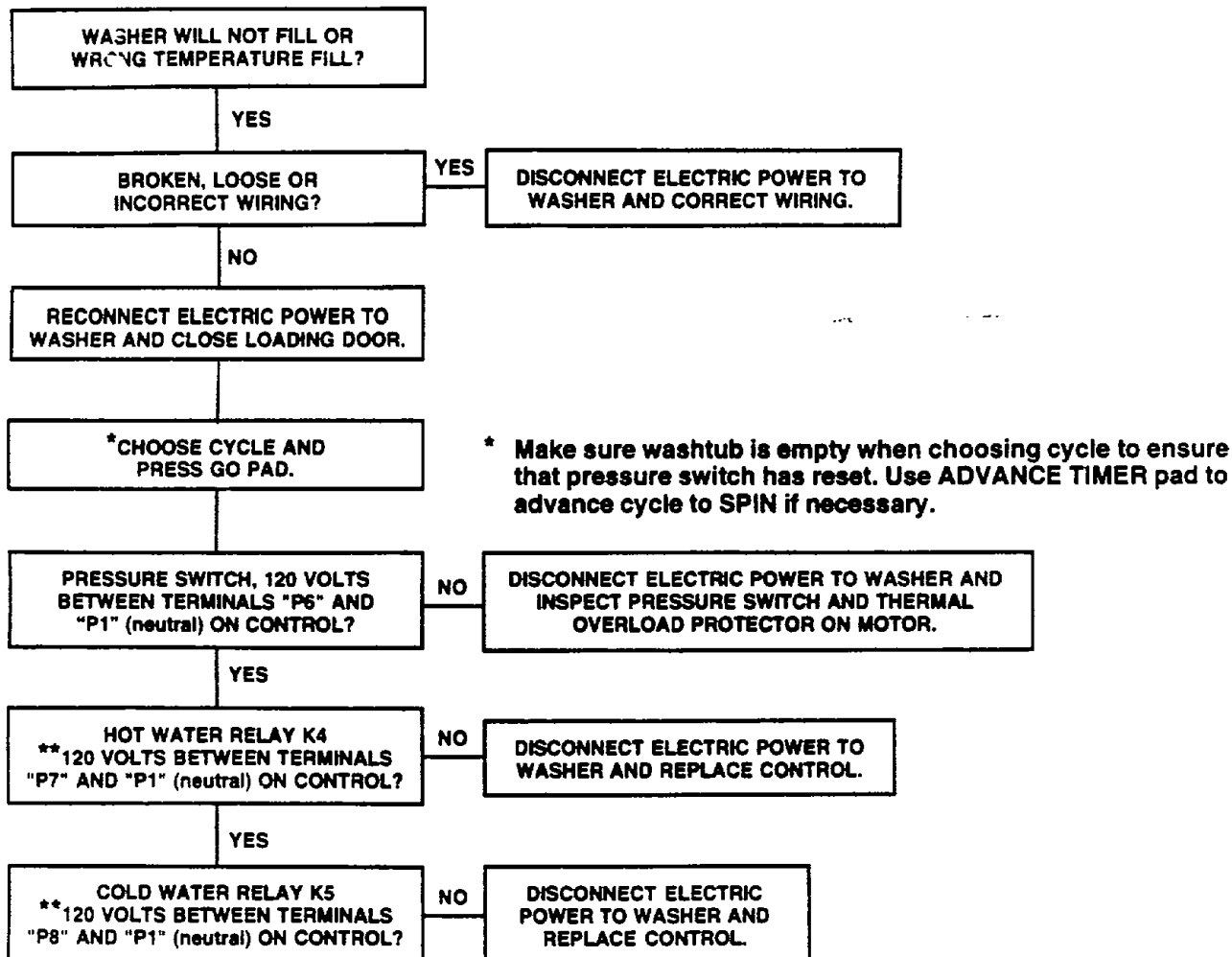
▲ WARNING

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

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

W003

68. SYMPTOM: WASHER WILL NOT FILL OR WRONG TEMPERATURE FILL



**SELECT EXTRA-LARGE
LOAD SIZE.**

**** NOTE: Both hot water relay "K4" and cold water relay "K5" are energized for warm water fill. Only the hot water relay "K4" will be energized for hot water fill and only the cold water relay "K5" will be energized for cold water fill.**

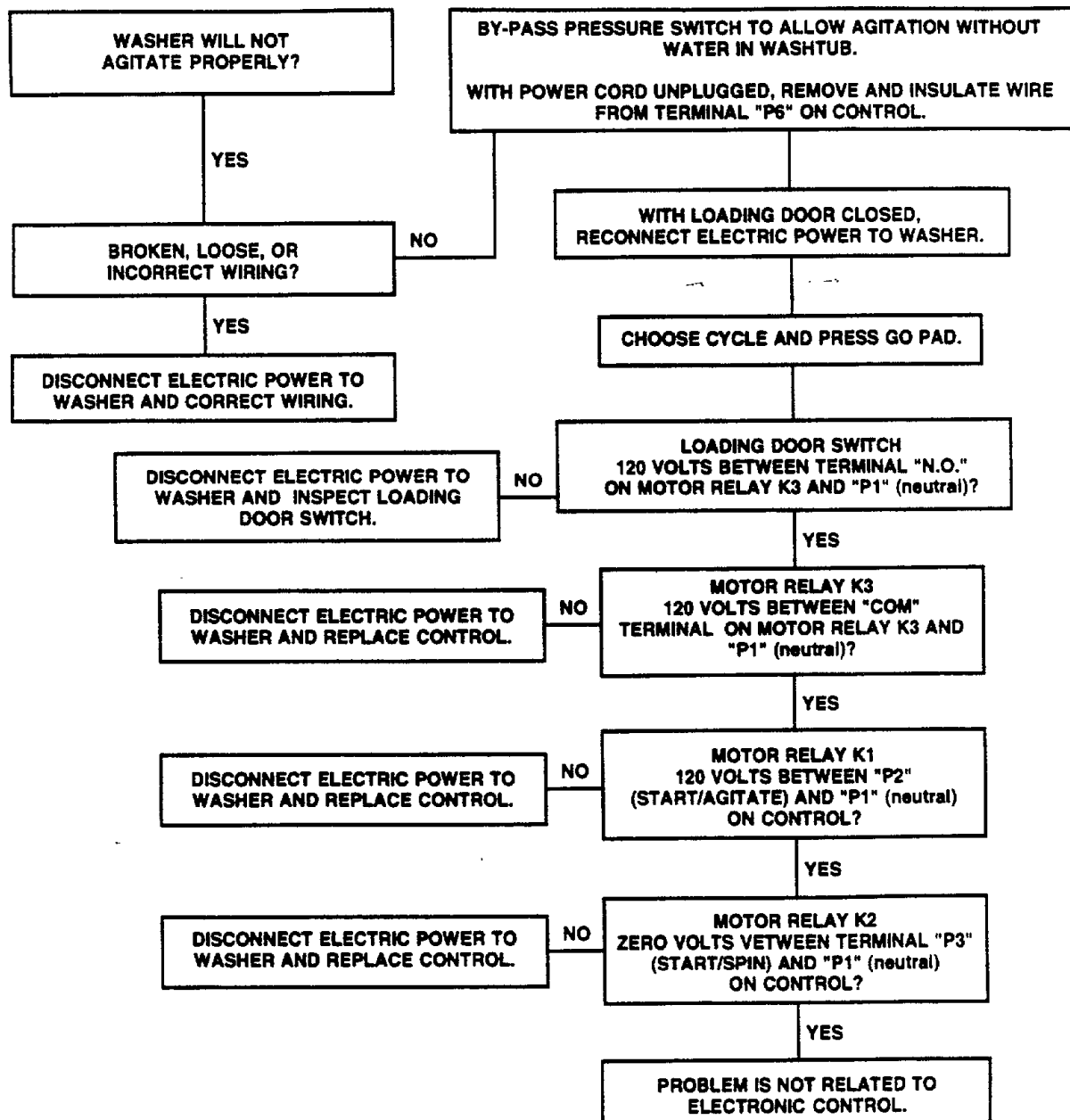
▲ WARNING

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

69. SYMPTOM: WASHER WILL NOT AGITATE PROPERLY



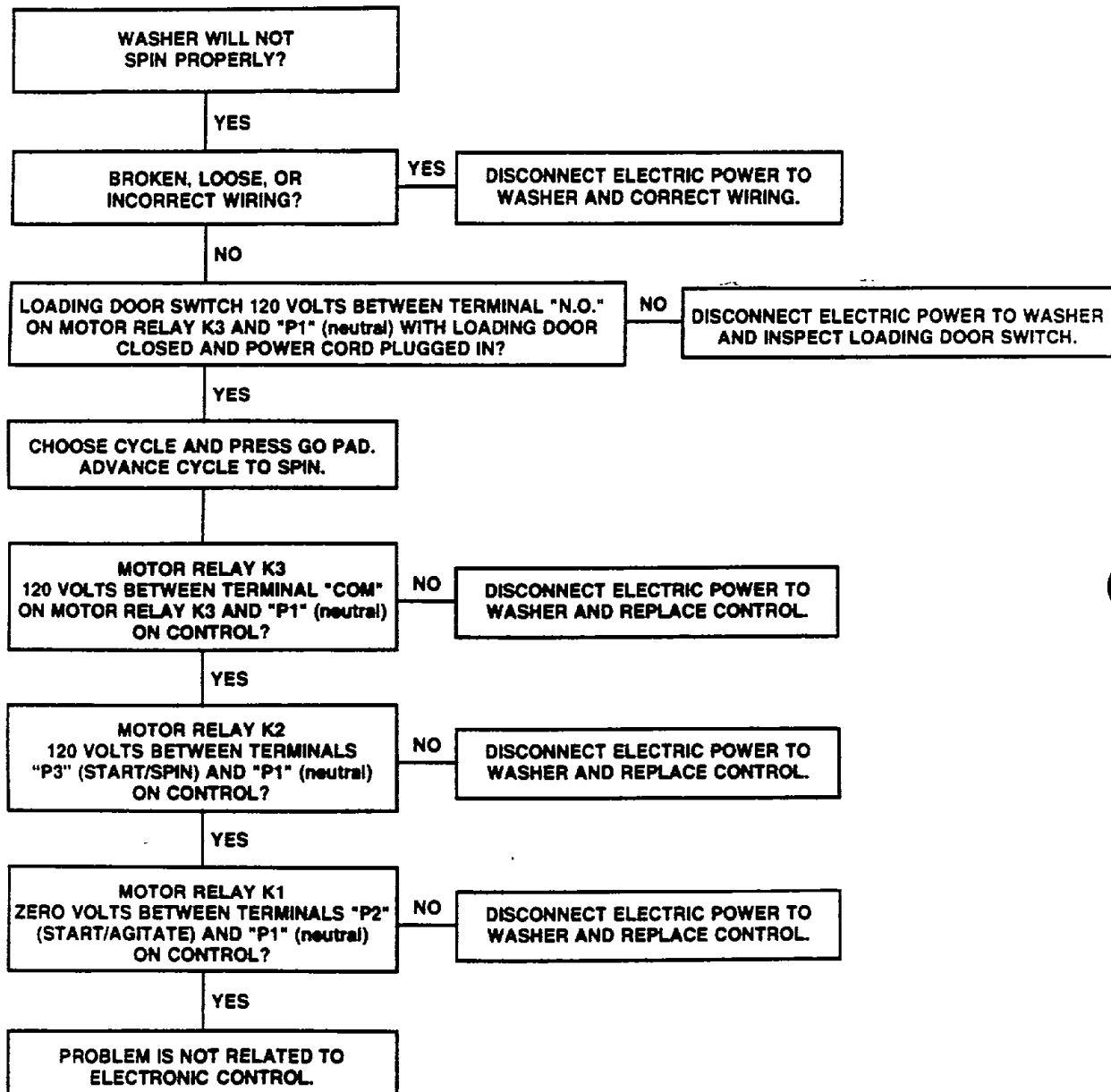
▲ WARNING

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.**

W002

70. SYMPTOM: WASHER WILL NOT SPIN PROPERLY



▲ 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

71. CONTROL REPLACEMENT

When a problem with the electronic control is detected during the diagnostic cycle or while making the electrical tests we have discussed, the control is replaced as a complete unit. Due to the sensitivity of the electronic control, careful handling is required. As a precautionary measure, we recommend the use of a grounded wrist strap when handling the electronic controls. The wrist strap, cord, and alligator clip are designed to carry away any electrostatic charge from your body and to direct the charge to an available ground. By using this static protection device, potential electrostatic discharge problems associated with the handling of the electronic control will be minimized. Always handle the electronic control by the metal edges. If a wrist strap is not available, touch the washer while it is plugged in before handling the control to dissipate any charge.

To replace the control, first unplug the washer. Remove all of the wires connected to the control and take out the four screws securing the control

to the control hood. When removing wires from the control, hold down on the board near the appropriate terminal, and disconnect the wires using a pliers. Do not pull on wires.

The new control is supplied in a special anti-static wrapping, and protected by anti-static foam. While holding the metal edges, remove the control from the foam and the wrapping. Lift the inoperative control off the mounting bracket and place it on the anti-static wrapping. Before positioning the new control in the control hood, peel off the protective plastic coating from the front side of the control, then fasten the control down with the four screws. Following the wiring diagram, reconnect the wires to the new control, then replace the control hood.

IMPORTANT: It is important to take care when handling the original control. It must be carefully placed in the anti-static wrapping and the anti-static foam which was removed from the new control. A copy of the replacement report, shown on Page 96, must be completely filled out and returned with the control. Warranty credit will not be issued if the control is not wrapped properly.

Electronic Control Board Replacement Report

Installation Date: _____

Date Failed: _____

Model No. _____

Serial No.: _____

Service Company Identification No.: _____

1. What was the customer's complaint?

2. Mark the cause of the complaint in the appropriate box below:

Washer Control Failure

☐ **Failure in Diagnostic Cycle**

Transformer:

- ☐ Resistance not in 60 - 112 Ohm range between "P4" and "P1"?

Hot Water Relay K4:

- ☐ 120 Volts not found between "P7" and "P1" in hot fill?

Cold Water Relay K5:

- ☐ 120 Volts not found between "P8" and "P1" in cold fill?

Main Motor Relay K3:

- ☐ 120 Volts not found between "Com" and "P1" in agitation?
- ☐ 120 Volts not found between "Com" and "P1" in spin?

Agitation Relay K1:

- ☐ 120 Volts not found between "P2" and "P1" in agitation?
- ☐ 120 Volts found between "P2" and "P1" in spin?

Spin Relay K2:

- ☐ 120 Volts not found between "P3" and "P1" during spin?
- ☐ 120 Volts found between "P3" and "P1" during agitation?

Dryer Control Failure

☐ **Failure in Diagnostic Cycle**

Transformer:

- ☐ Resistance not in 116 - 216 Ohm range between "P3" and "Com"?

Motor Relay K1:

- ☐ 120 Volts not found between "P1" and "P3"?

Heat Relay K2:

- ☐ With "P5" and "P1" disconnected, 120 Volts not found between "N.O." and "P3"?
- ☐ Zero Ohms found between "Com" and "N.O." (with dryer unplugged)?

☐ **Temperature Regulating Circuit:**

SH appears in the display window when the exhaust temperature is less than 175°F?

ADDITIONAL COMMENTS:

Both copies of this form **MUST** be completed and returned with the control board. Warranty is void if control board is returned improperly packed or damaged.

NOTES

SECTION VIII

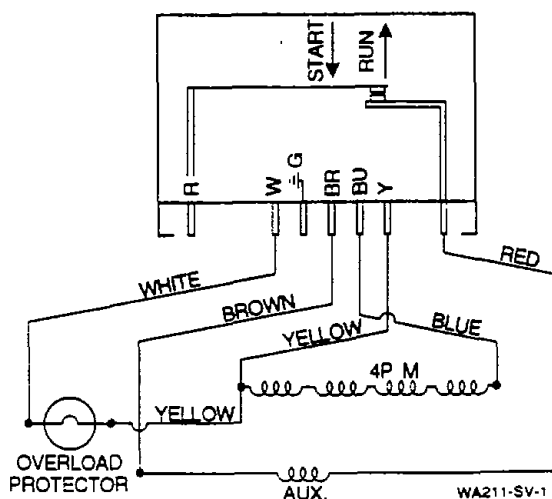
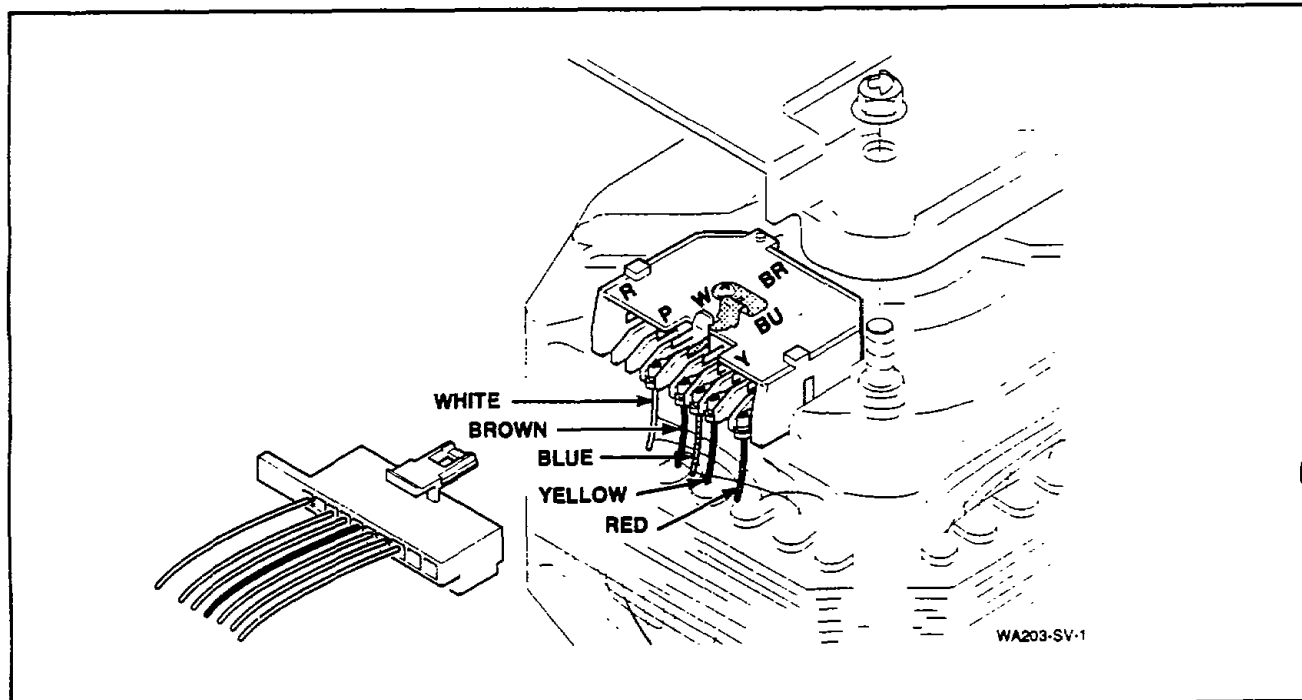
Internal Wiring of Washer Motor Switch

▲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



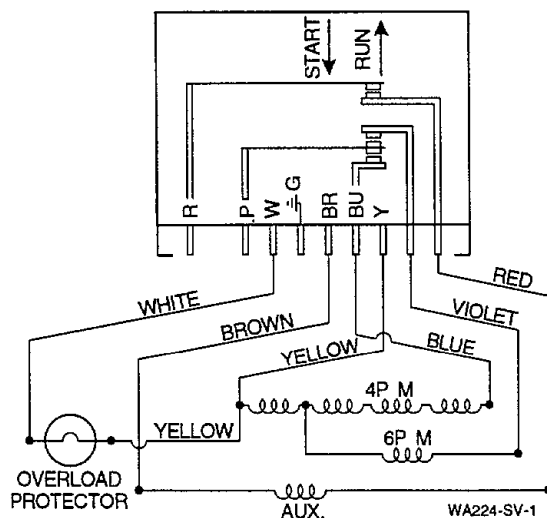
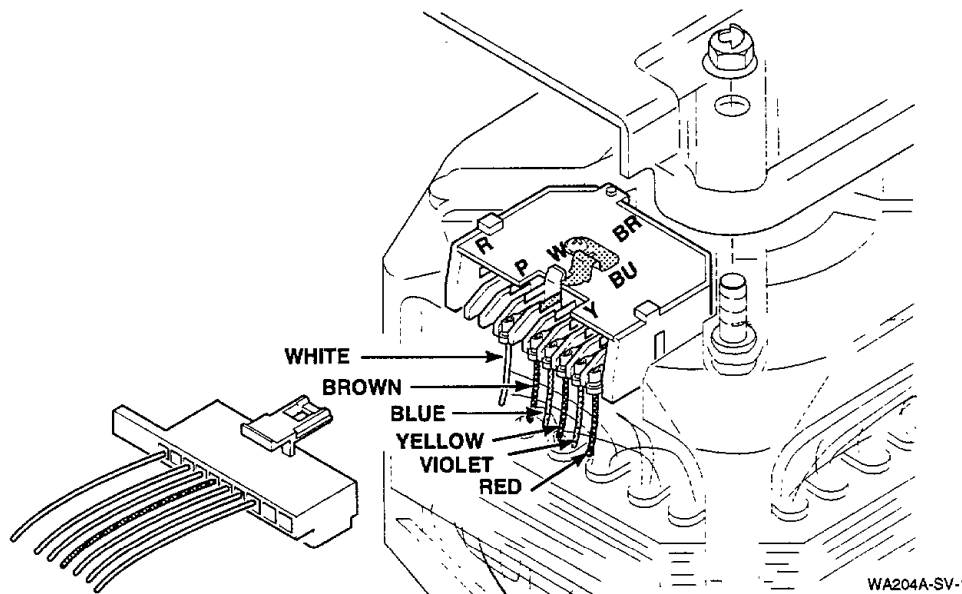
**Motor Assembly
(1 Speed Motors)**

▲WARNING

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

- 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)