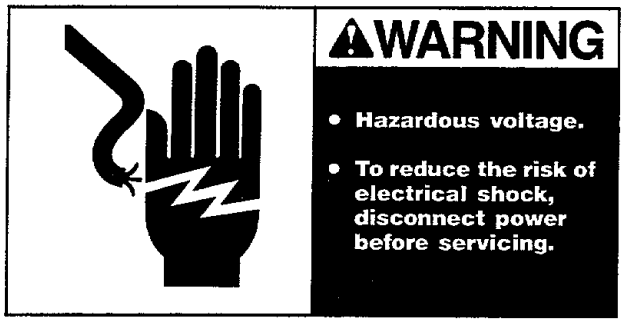
Parts and Service Manual for Commercial Automatic Washers

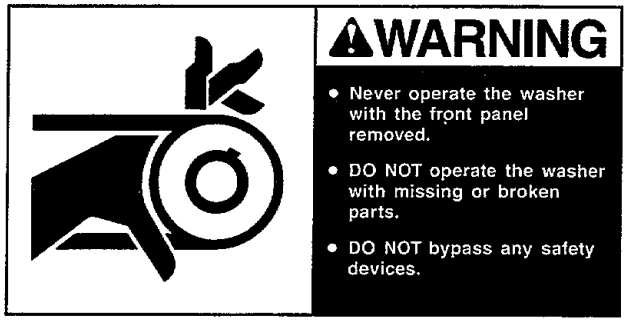
("ZA" Series)

Part No. 34433
3/91



⚠WARNING

- **Hazardous voltage.**
- **To reduce the risk of electrical shock, disconnect power before servicing.**



⚠WARNING

- Never operate the washer with the front panel removed.
- DO NOT operate the washer with missing or broken parts.
- DO NOT bypass any safety devices.

⚠WARNING

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

Do not repair or replace any part of the washer 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, those ground wires must be reconnected to insure that the washer is properly grounded and to reduce the risk of fire, electric shock or personal injury.

NOTE: The WARNING 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 washers. These factors MUST BE supplied by the person(s) installing, maintaining and/or operating the washer.

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

IMPORTANT INFORMATION: During the lifetime of your washer, it may require service. The information contained in this manual was written and is intended for use by qualified service technicians who are familiar with the safety procedures required in the repair of your washer, and who are equipped with the proper tools and testing equipment.

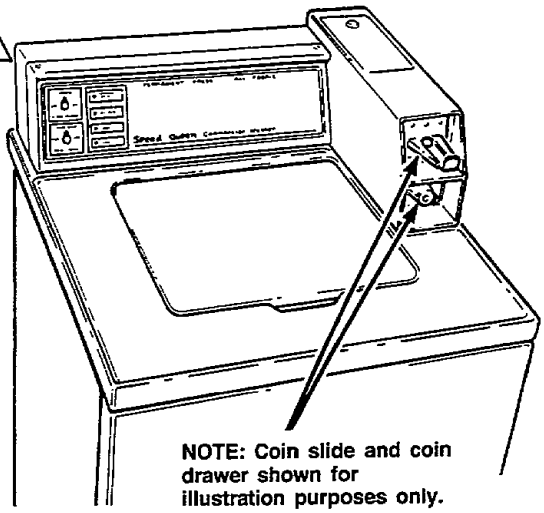
Repairs that are made to your washer by unqualified persons can result in hazards due to improper assembly or adjustments subjecting you, or the inexperienced person making such repairs, to the risk of injury or electrical shock which can be serious or even fatal.

If you or an unqualified person perform service on your washer, 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.

NAMEPLATE LOCATION

IMPORTANT

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



NOTE: Coin slide and coin drawer shown for illustration purposes only.

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(continued)

TABLE OF CONTENTS *(continued)*

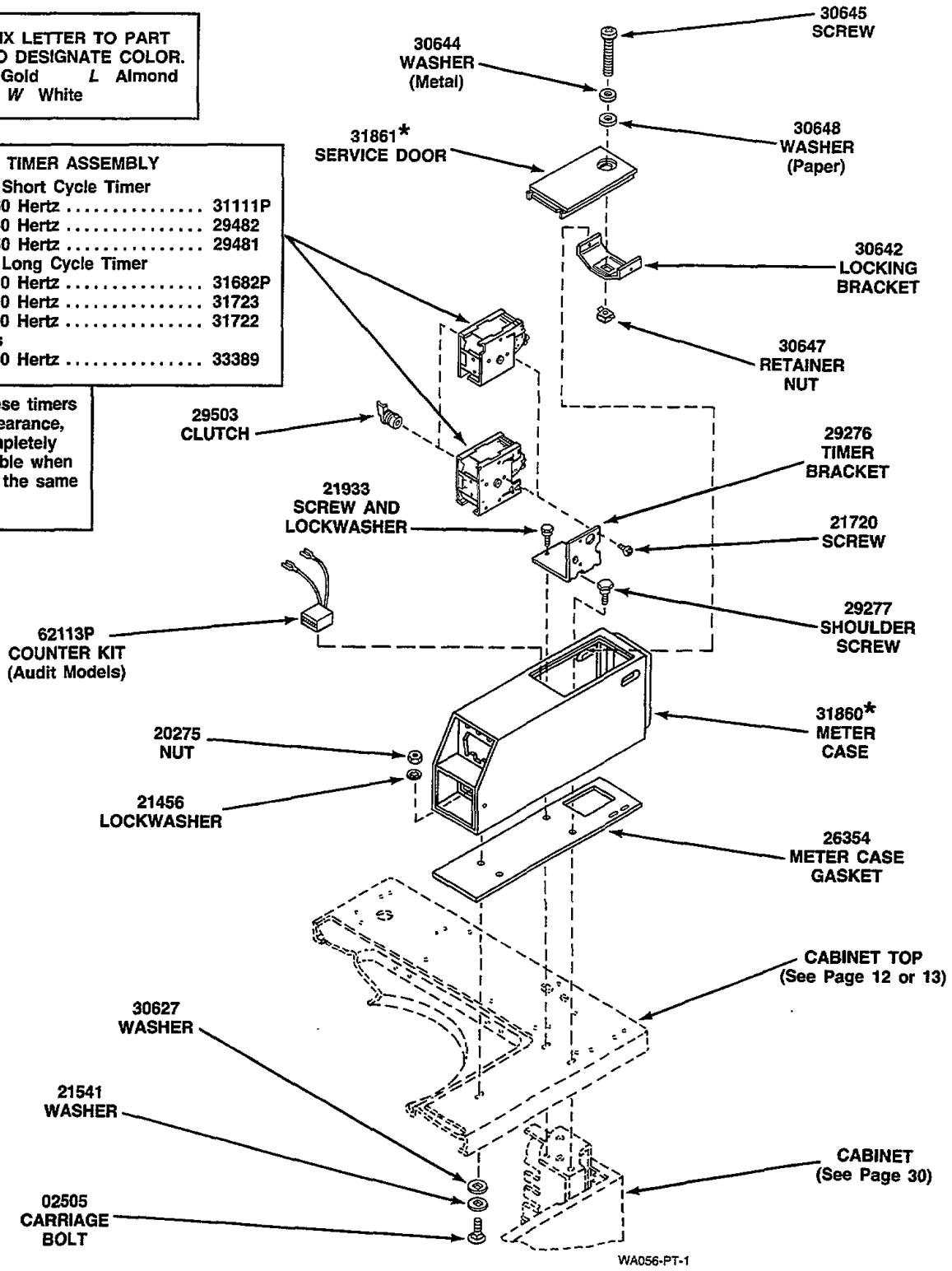
SECTION I
Parts

*ADD SUFFIX LETTER TO PART NUMBER TO DESIGNATE COLOR.
H Harvest Gold *L* Almond
W White

TIMER ASSEMBLY

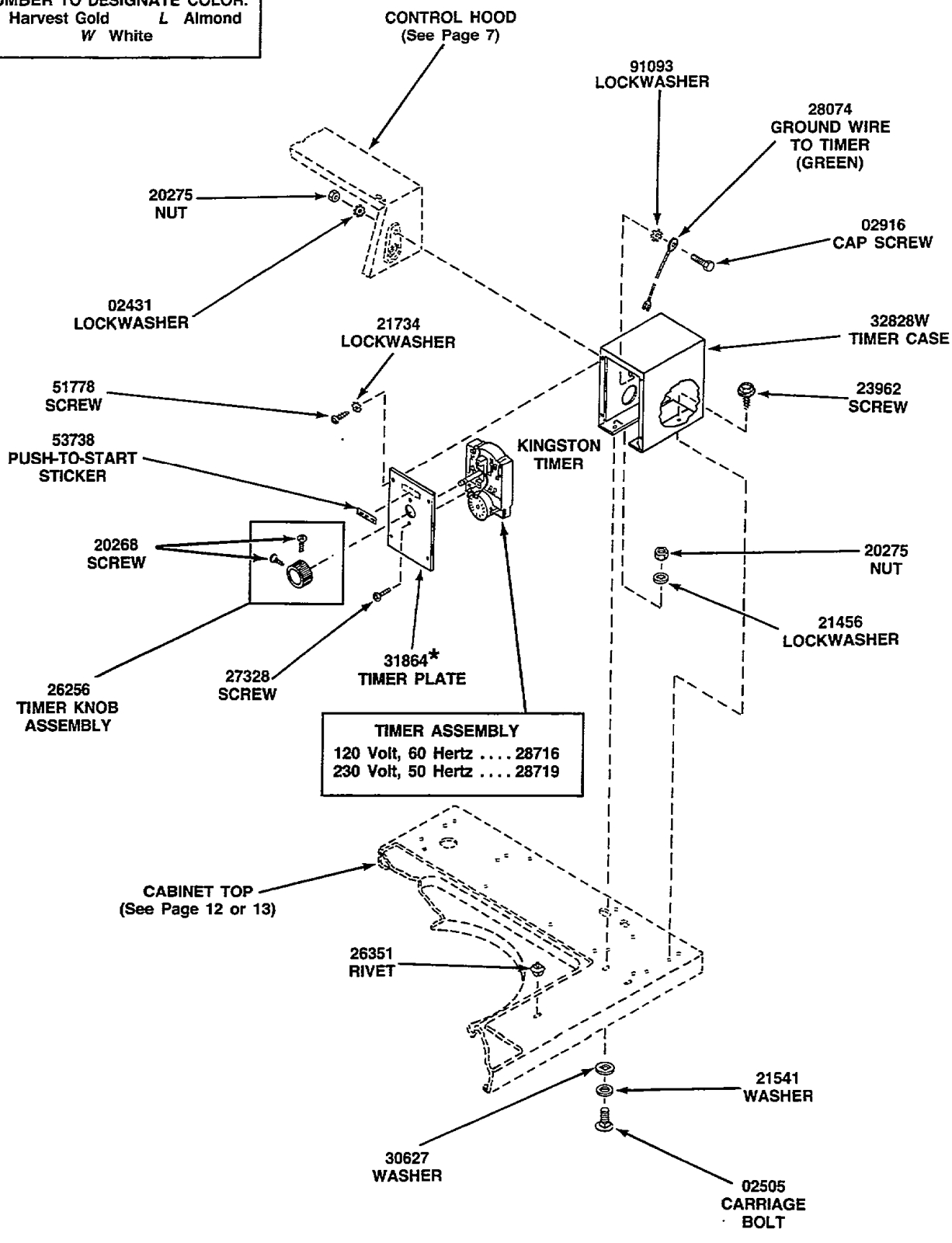
Models with Short Cycle Timer	
120 Volt, 60 Hertz	31111P
115 Volt, 50 Hertz	29482
230 Volt, 50 Hertz	29481
Models with Long Cycle Timer	
120 Volt, 60 Hertz	31682P
115 Volt, 50 Hertz	31723
230 Volt, 50 Hertz	31722
Audit Models	
120 Volt, 60 Hertz	33389

Although these timers differ in appearance, they are completely interchangeable when identified by the same part number.



TIMER, METER CASE AND SERVICE DOOR (Metered Models)

*ADD SUFFIX LETTER TO PART NUMBER TO DESIGNATE COLOR.
H Harvest Gold *L* Almond
W White



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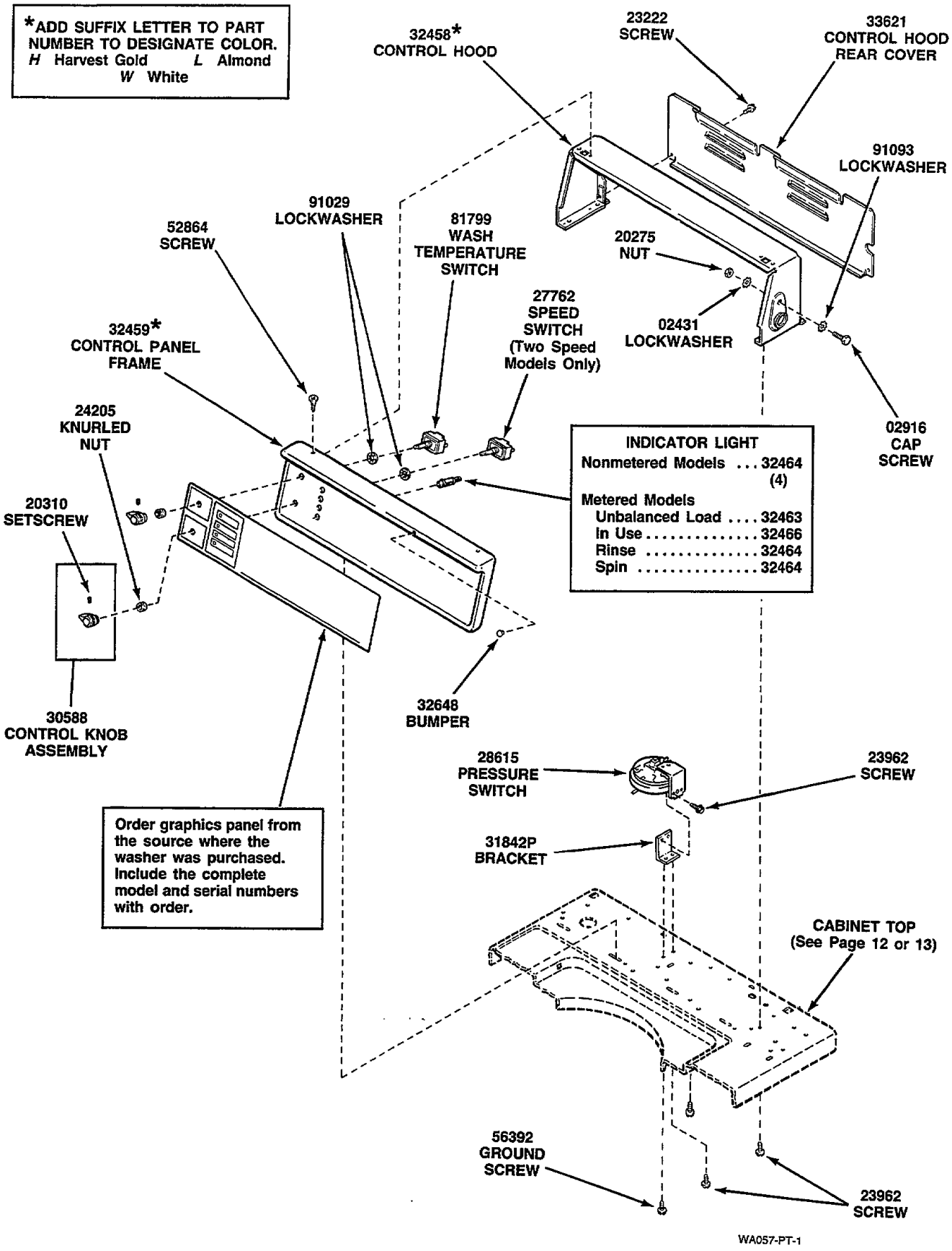
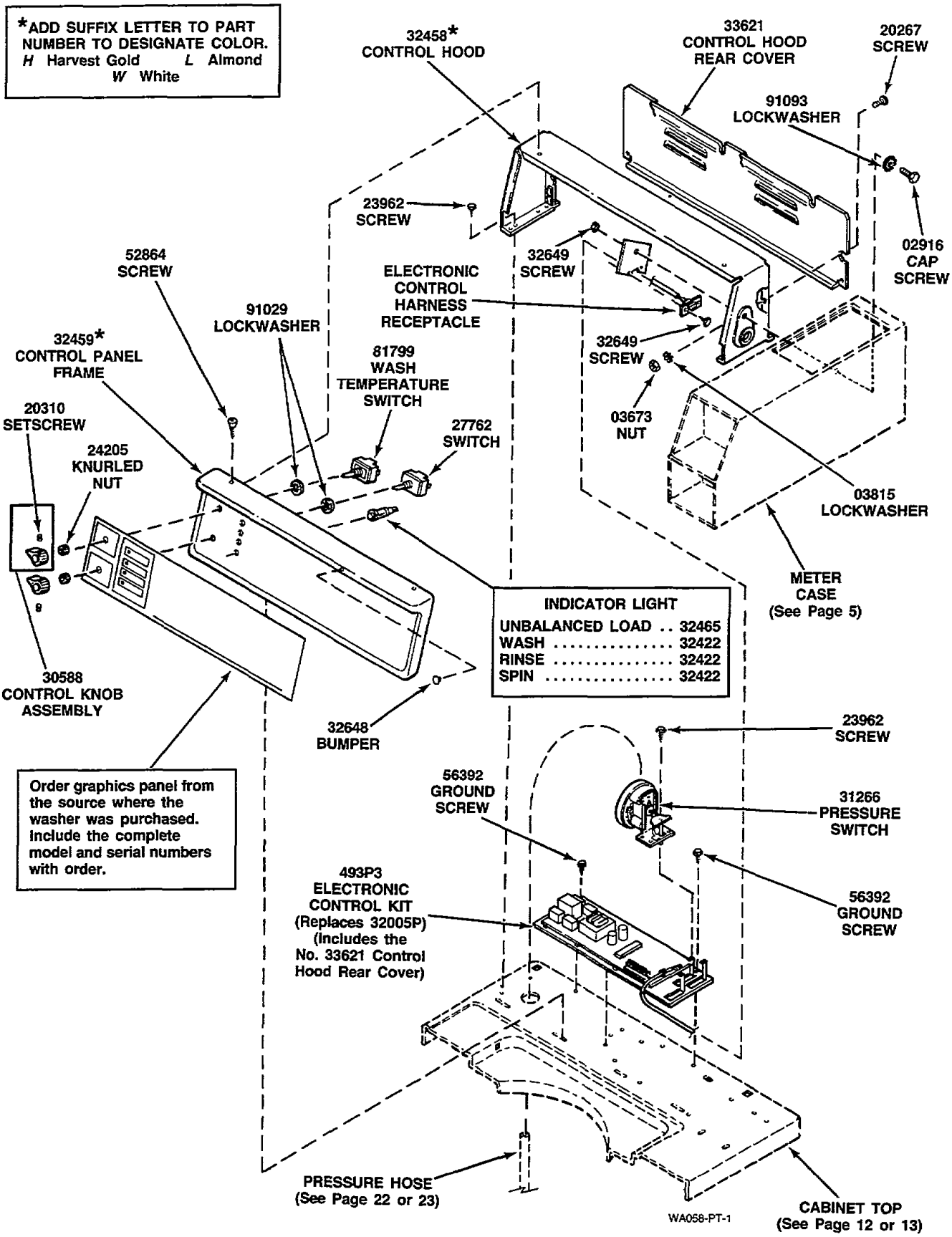
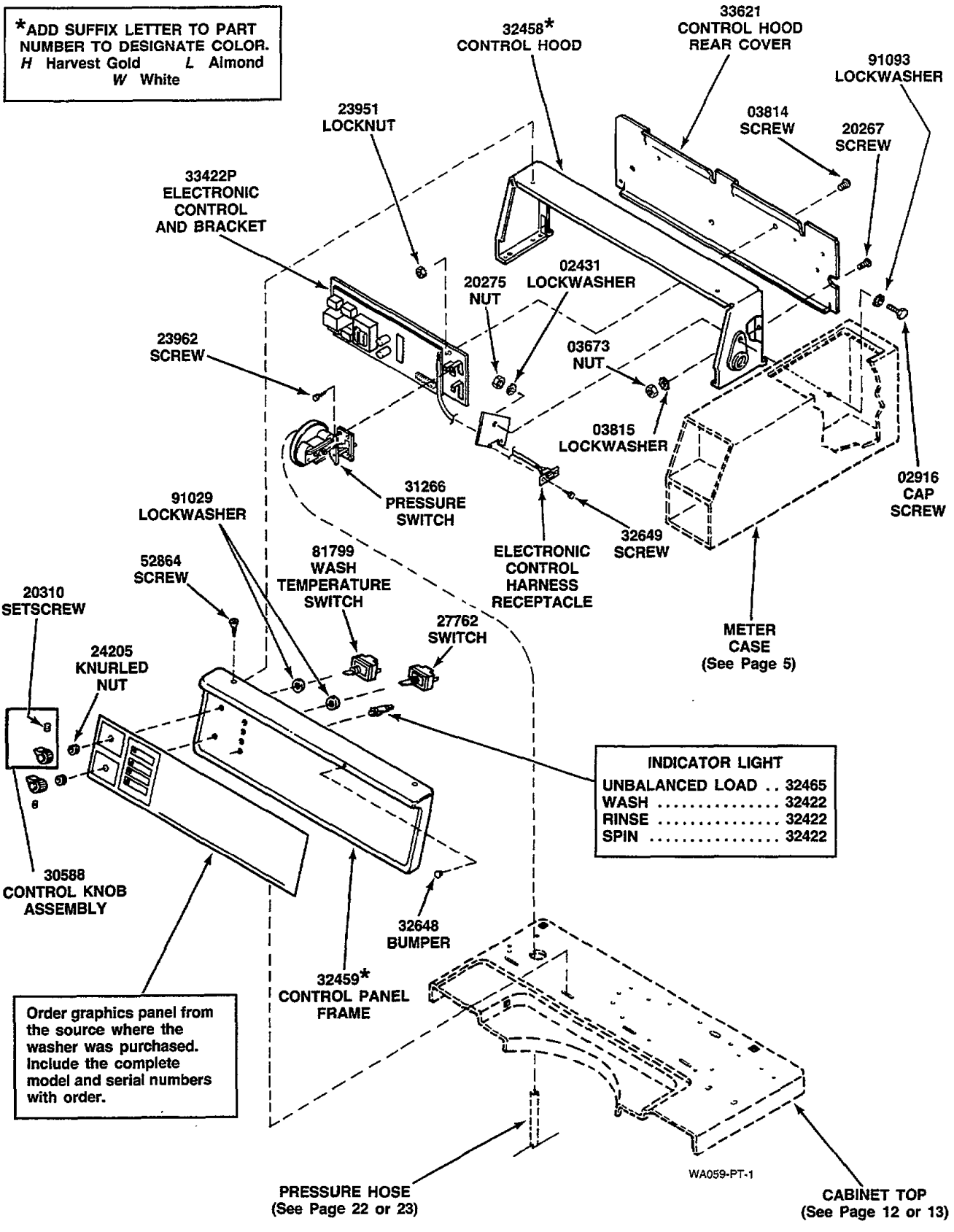
TIMER, CASE AND PLATE
(Nonmetered Models)



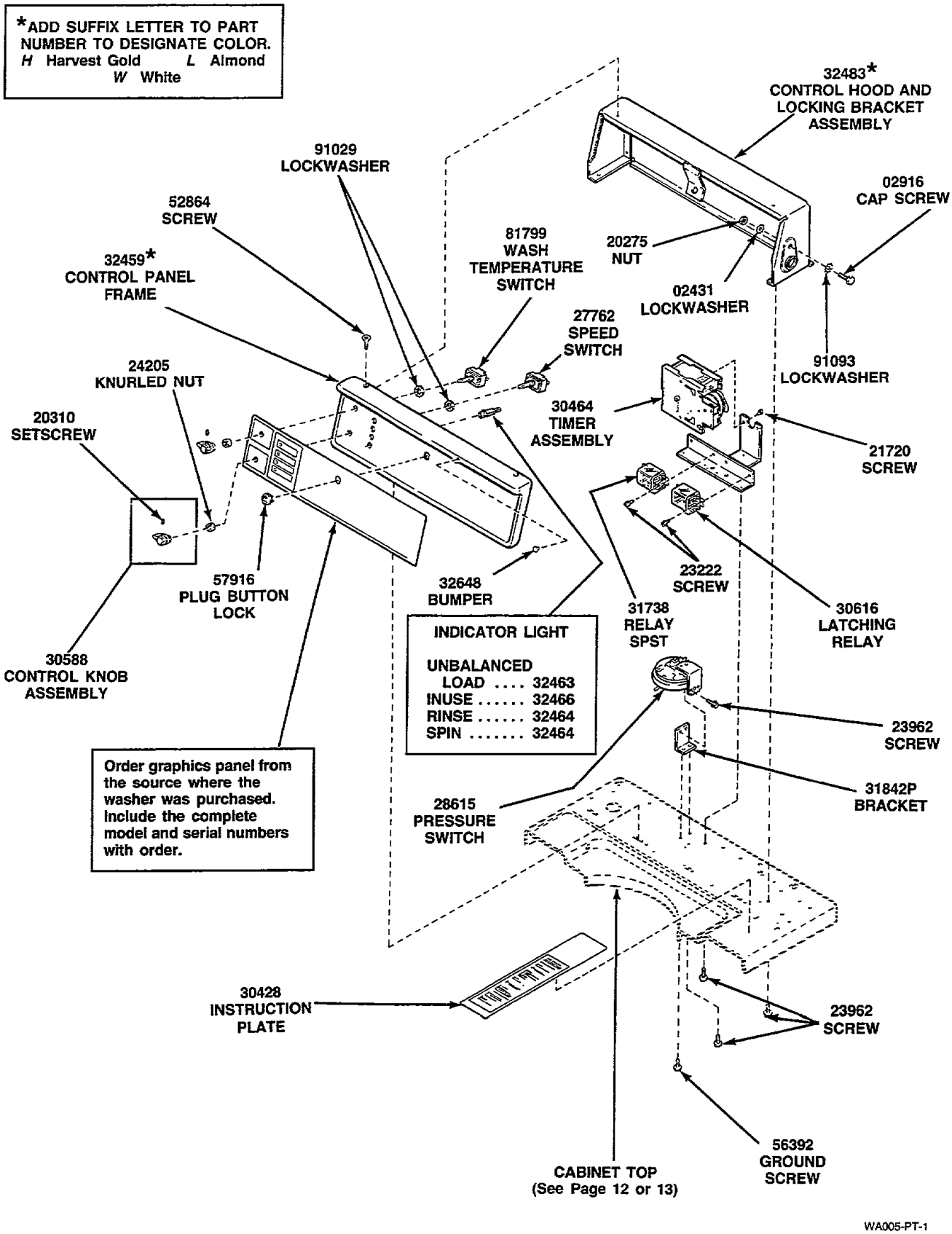
CONTROL PANEL, CONTROL HOOD AND CONTROLS
(Metered and Nonmetered Models)



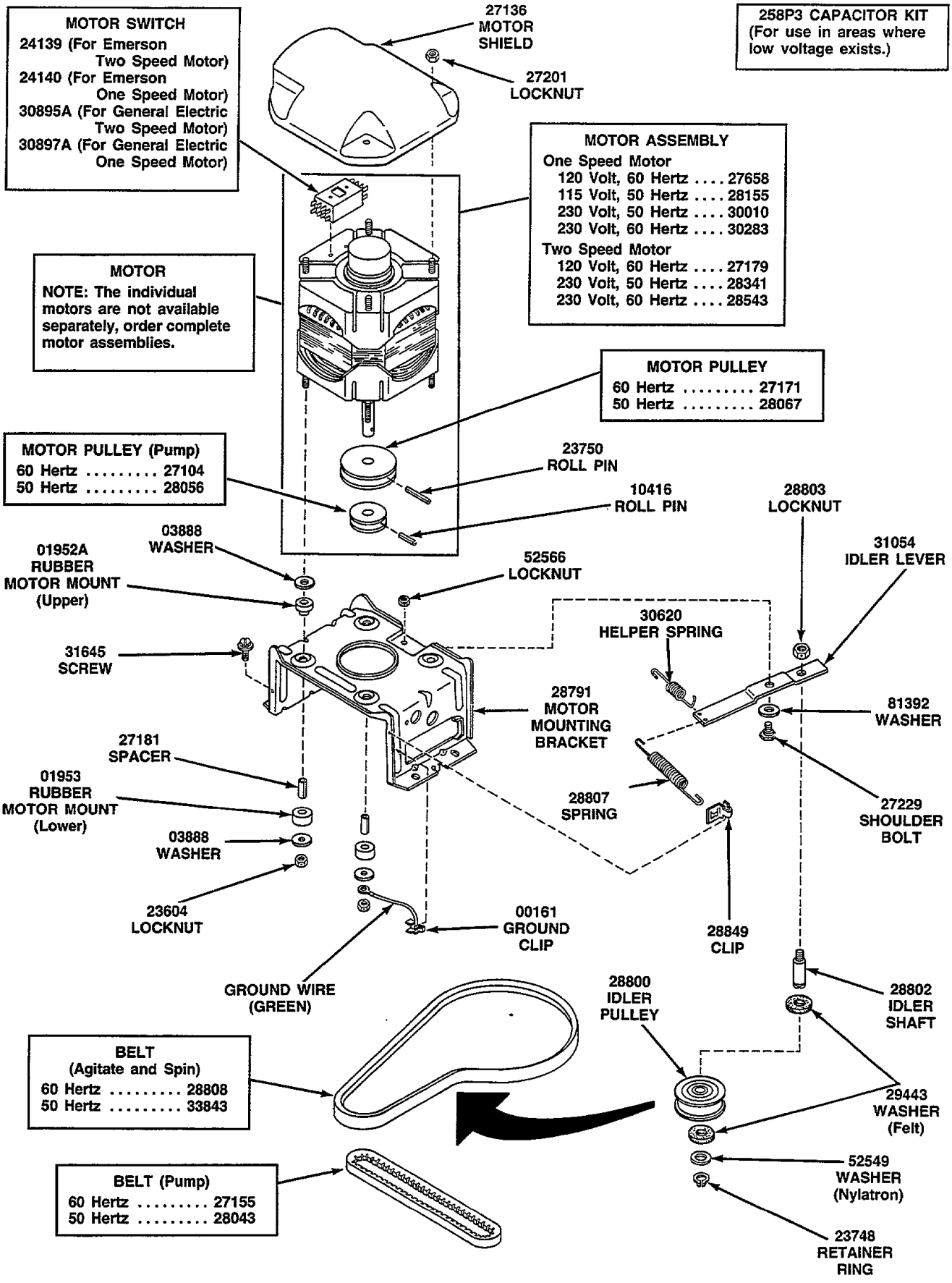
CONTROL PANEL, CONTROL HOOD AND CONTROLS
(Electronic Models through Serial No. R8145710XK)



CONTROL PANEL, CONTROL HOOD AND CONTROLS
(Electronic Models starting Serial No. R8145711XK)



CONTROL PANEL, CONTROL HOOD AND CONTROLS
(Card Reader Models)



MOTOR, MOUNTING BRACKET, BELTS AND IDLER ASSEMBLY

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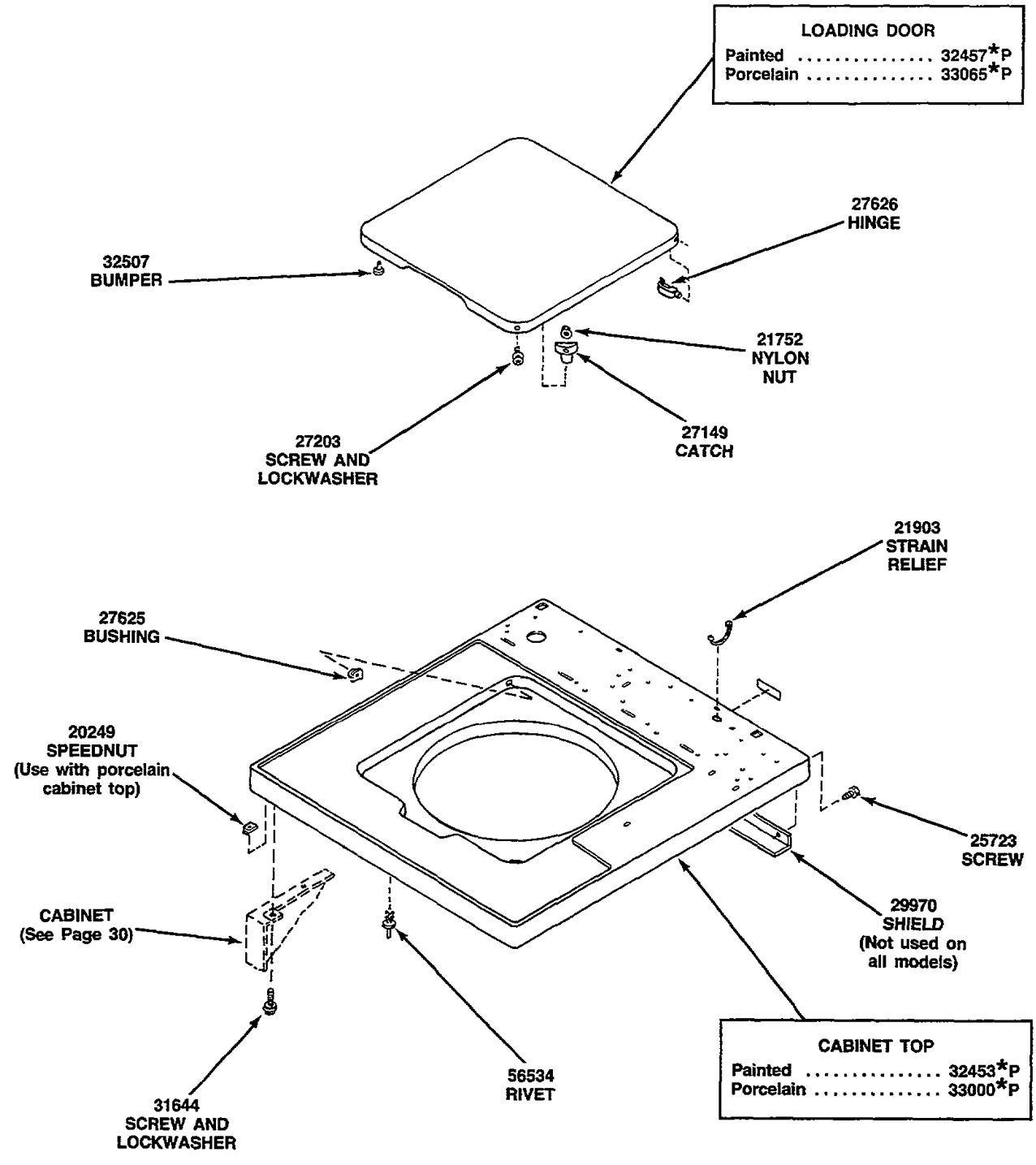
*ADD SUFFIX LETTER TO PART NUMBER TO DESIGNATE COLOR.
H Harvest Gold *L* Almond
W White



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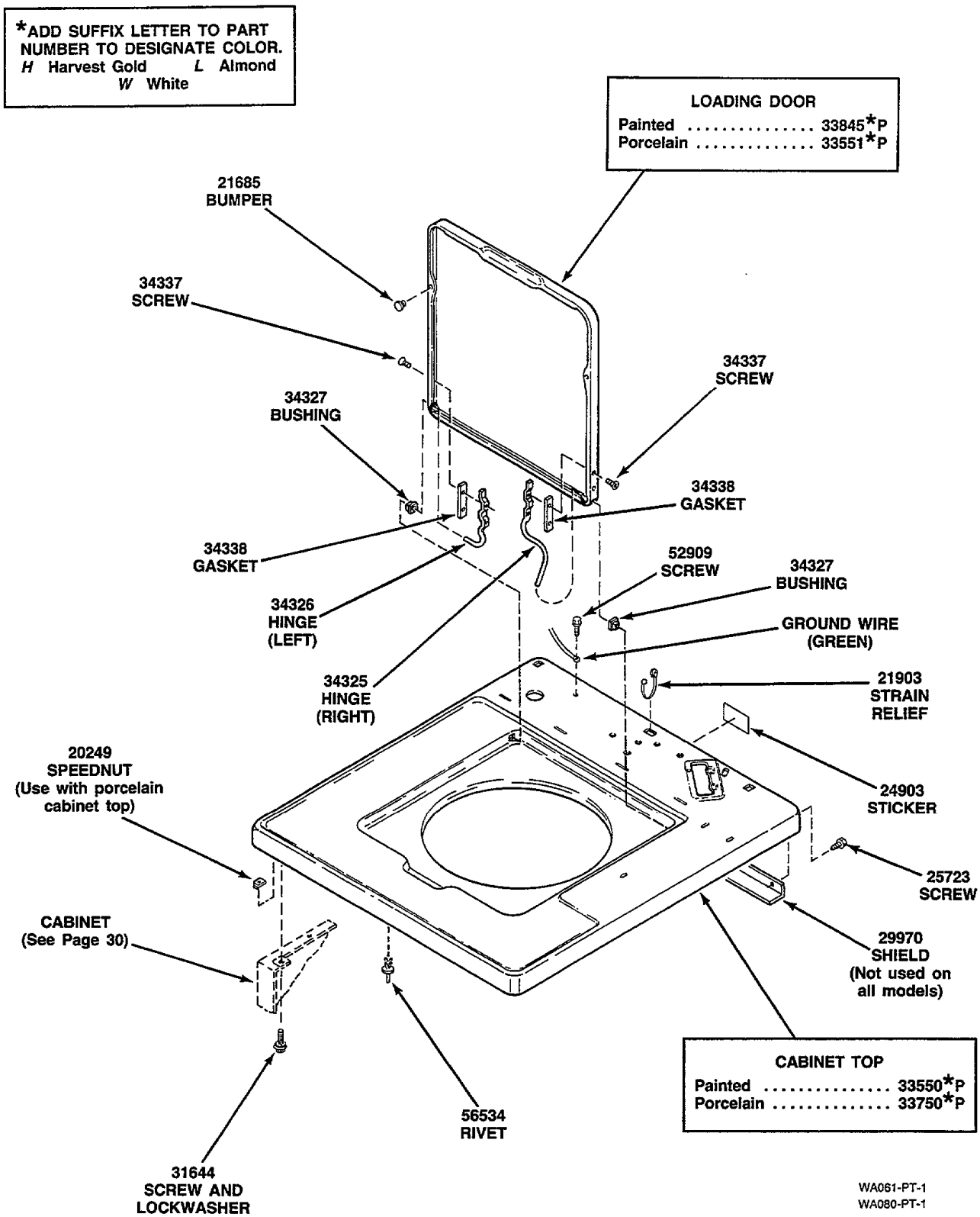
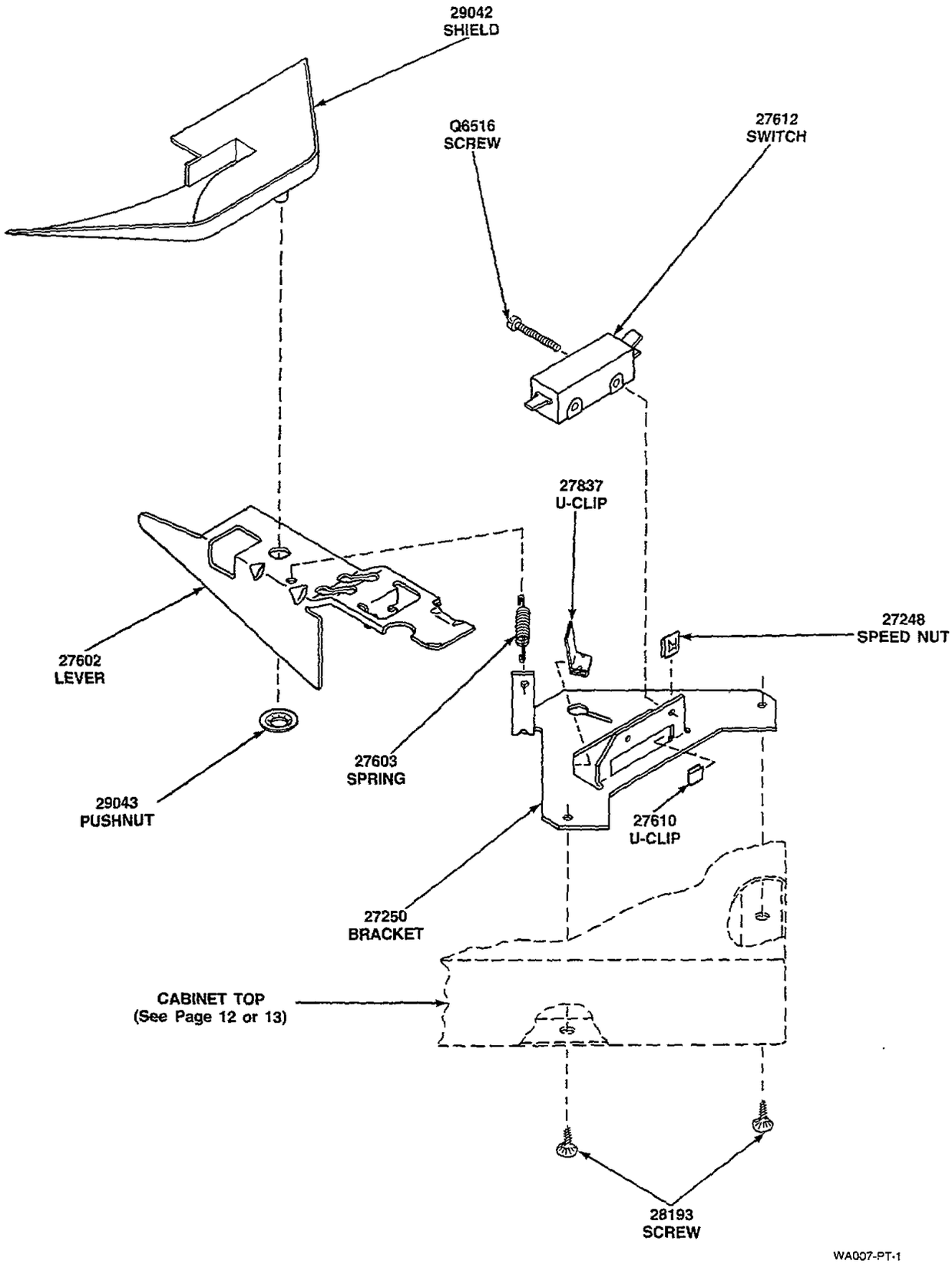
WA080-PT-1

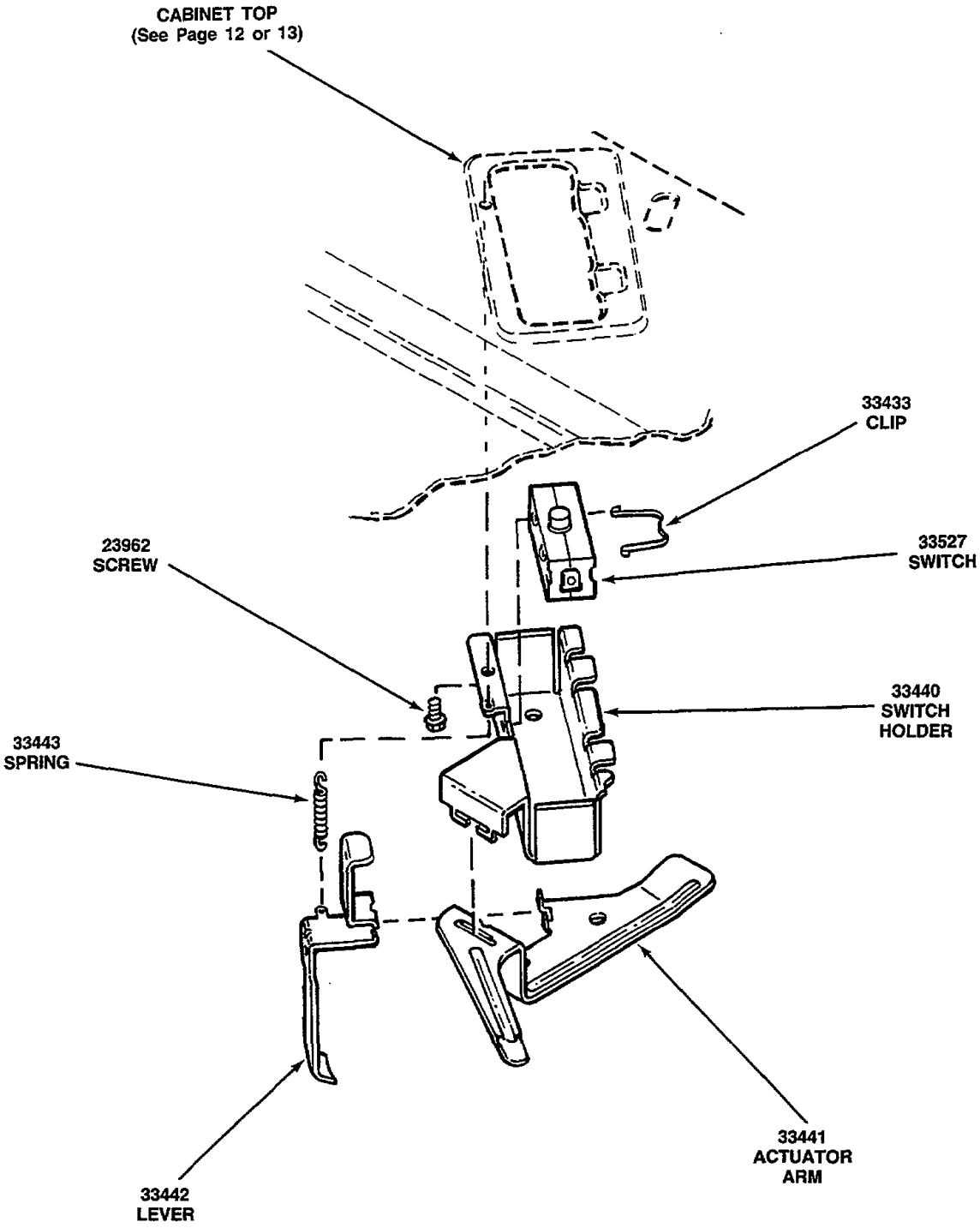
CABINET TOP AND LOADING DOOR
(Through Serial No. R8237277YK)



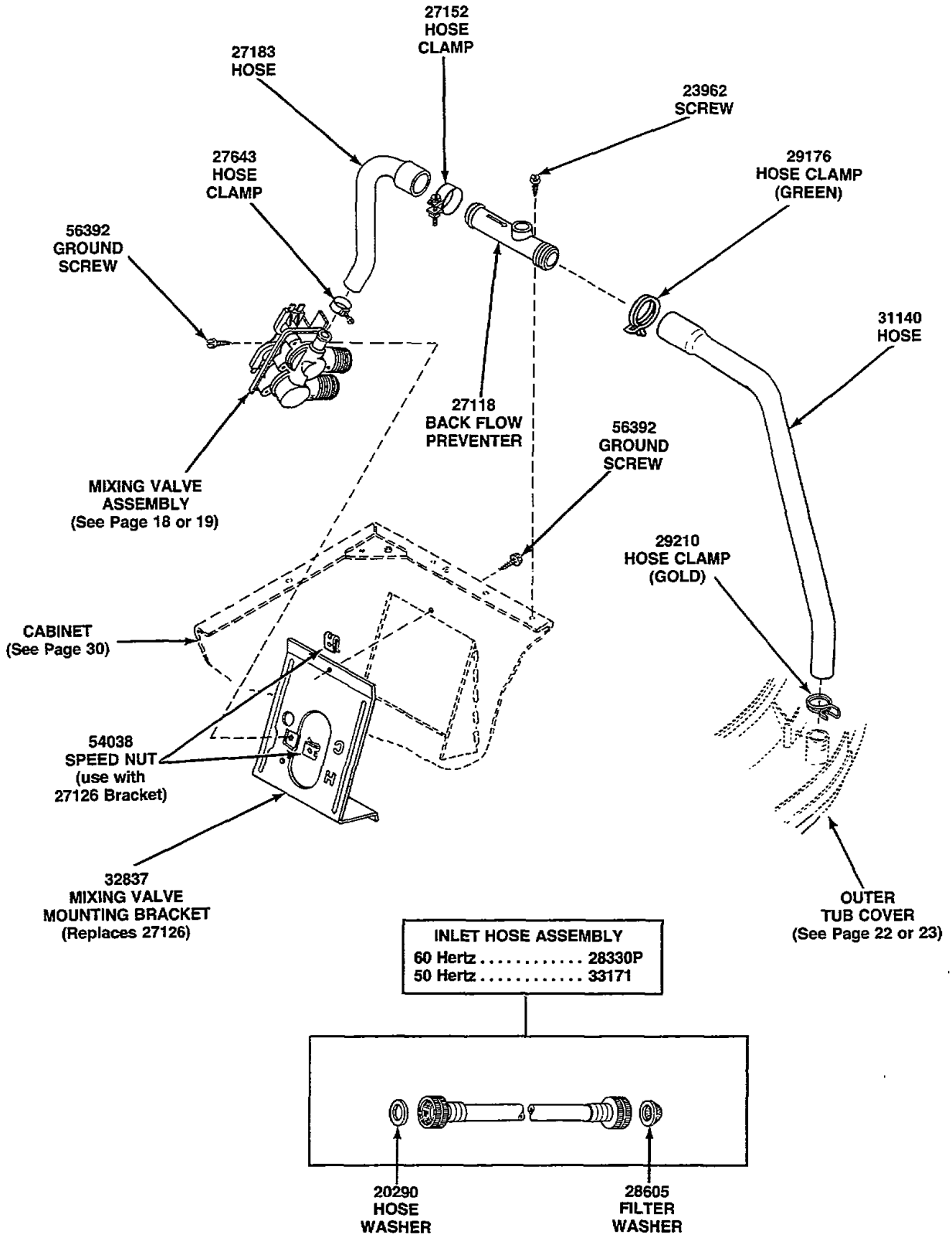
CABINET TOP AND LOADING DOOR
(Starting Serial No. R8237278YK)



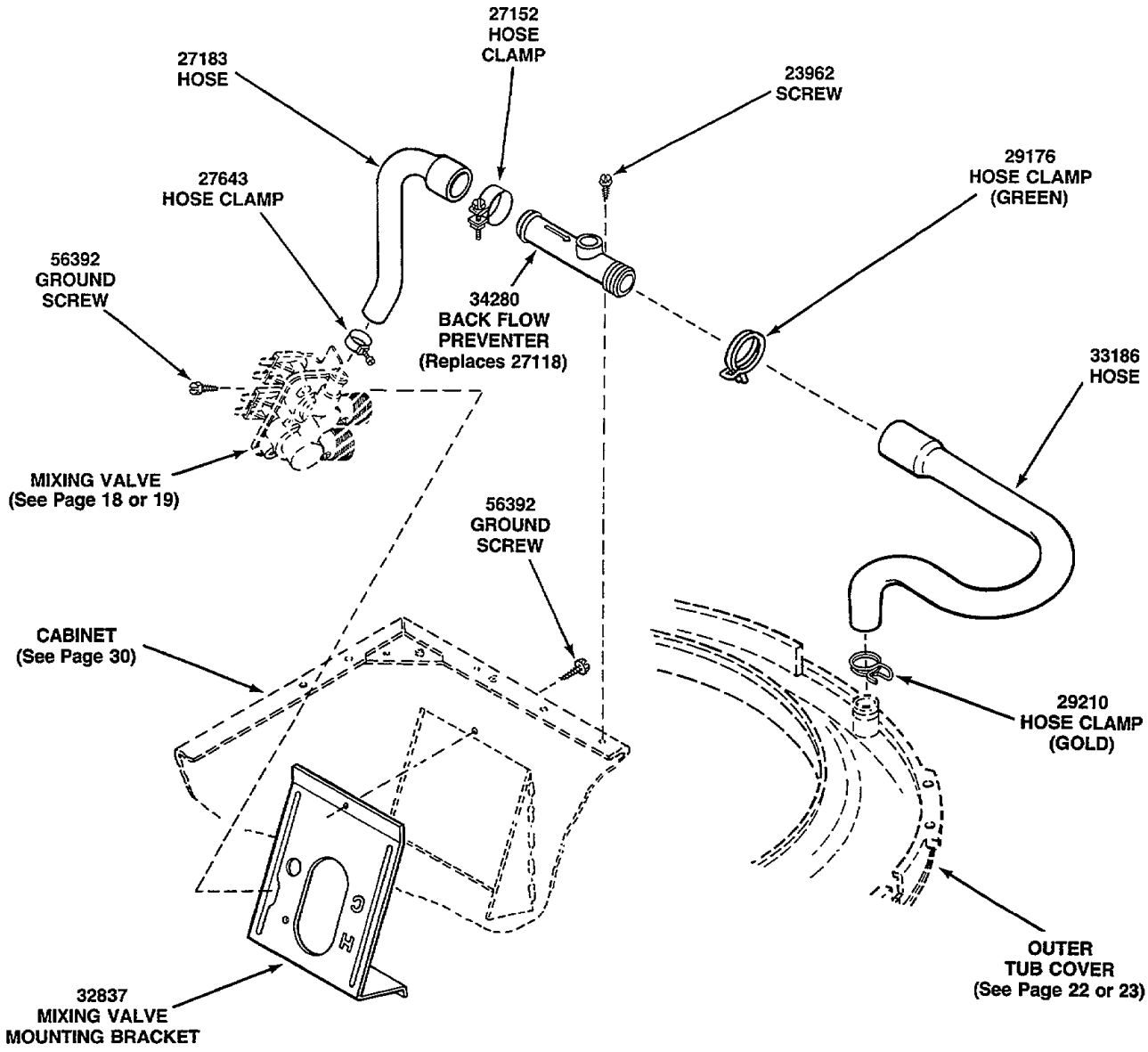
LOADING DOOR AND OUT-OF-BALANCE SWITCH
(Through Serial No. R8237277YK)

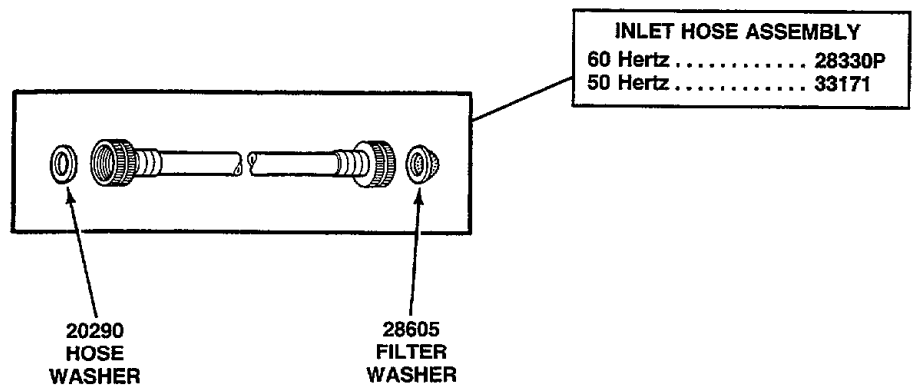


LOADING DOOR AND OUT-OF-BALANCE SWITCH
(Starting Serial No. R8237278YK)



INLET HOSE, FILLER HOSE, BACK FLOW PREVENTER AND MIXING VALVE MOUNTING BRACKET (Through Serial No. R8237277YK)





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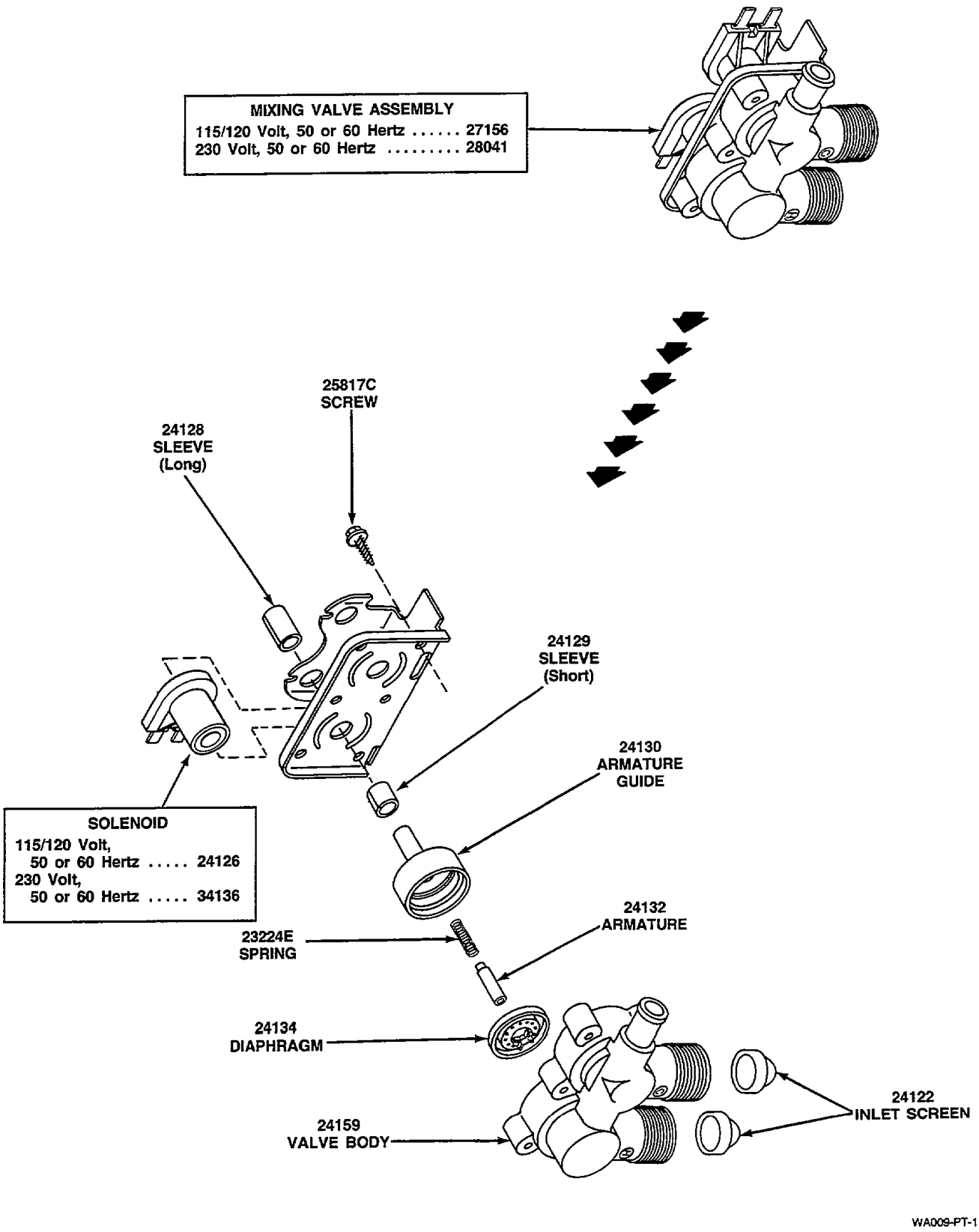
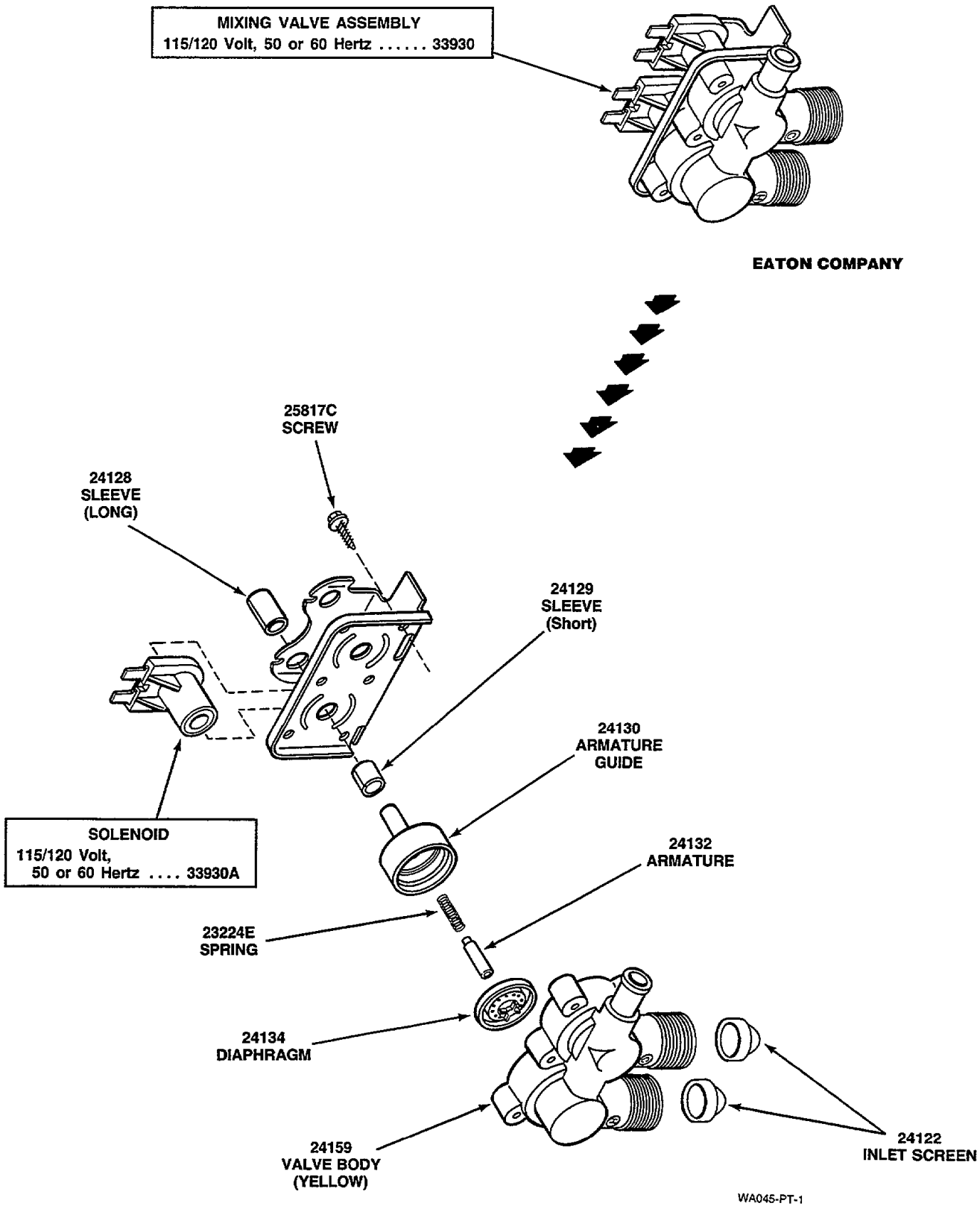
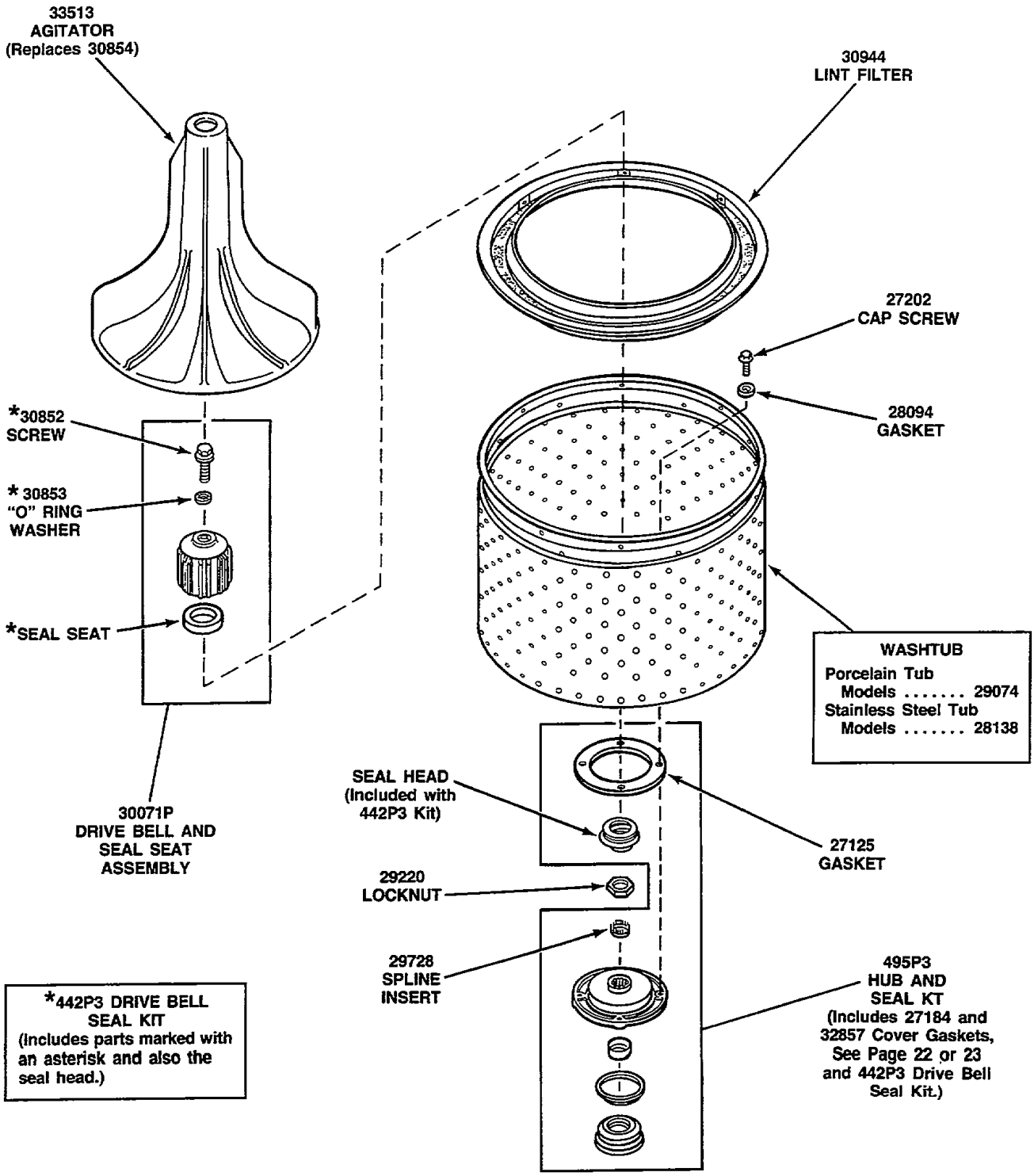
INLET HOSE, FILLER HOSE, BACK FLOW PREVENTER AND MIXING VALVE MOUNTING BRACKET (Starting Serial No. R8237278YK)



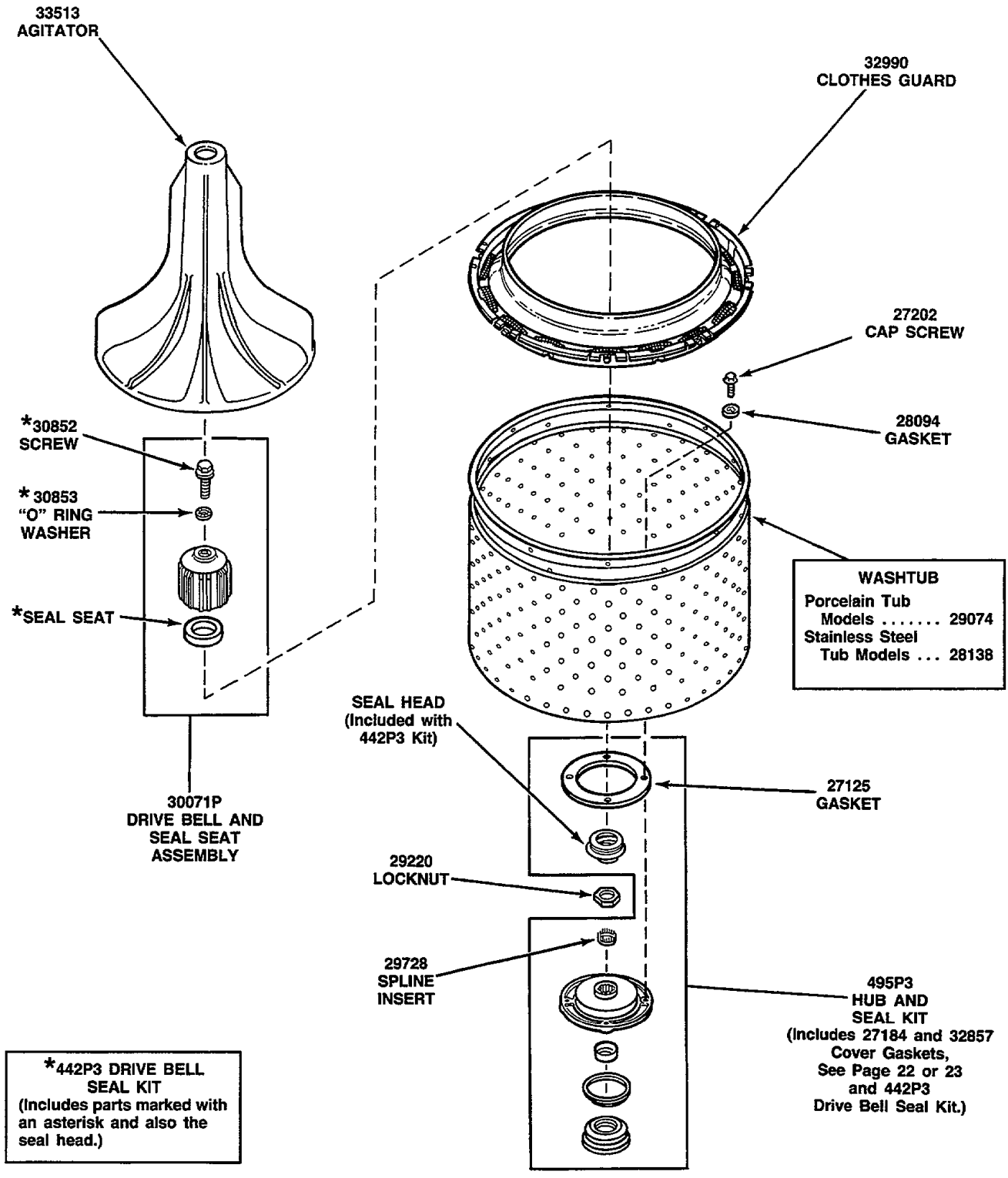
MIXING VALVE ASSEMBLY
(Through Serial No. R8237277YK)



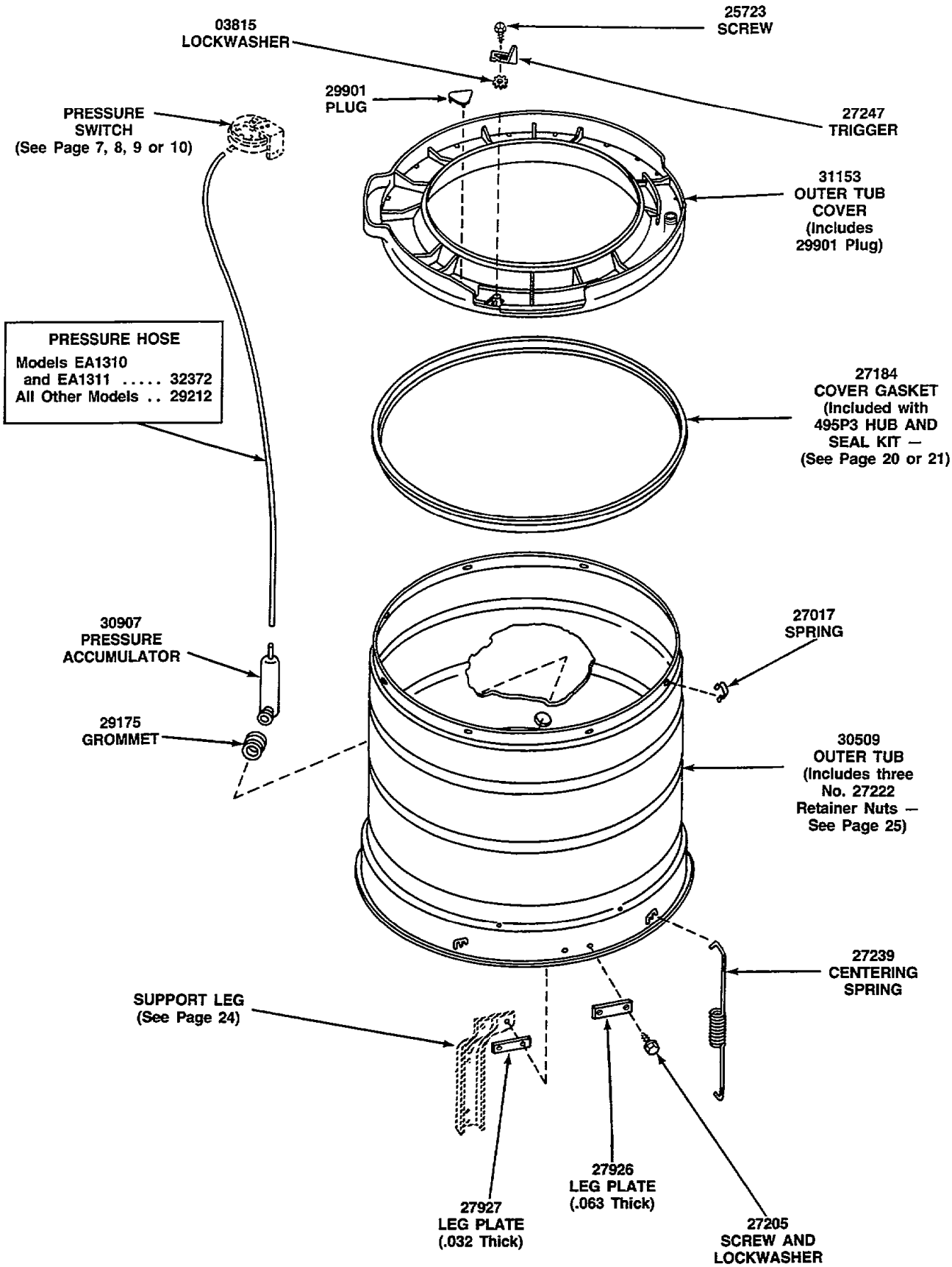
MIXING VALVE ASSEMBLY
(Starting Serial No. R8237278YK)



AGITATOR, DRIVE BELL, SEAL SEAT, WASHTUB AND HUB
(through Serial No. R8237277YK)



AGITATOR, DRIVE BELL, SEAL SEAT, WASHTUB AND HUB
(Starting Serial No. R8237278YK)



OUTER TUB, COVER AND PRESSURE HOSE
(Through Serial No. R8237277YK)

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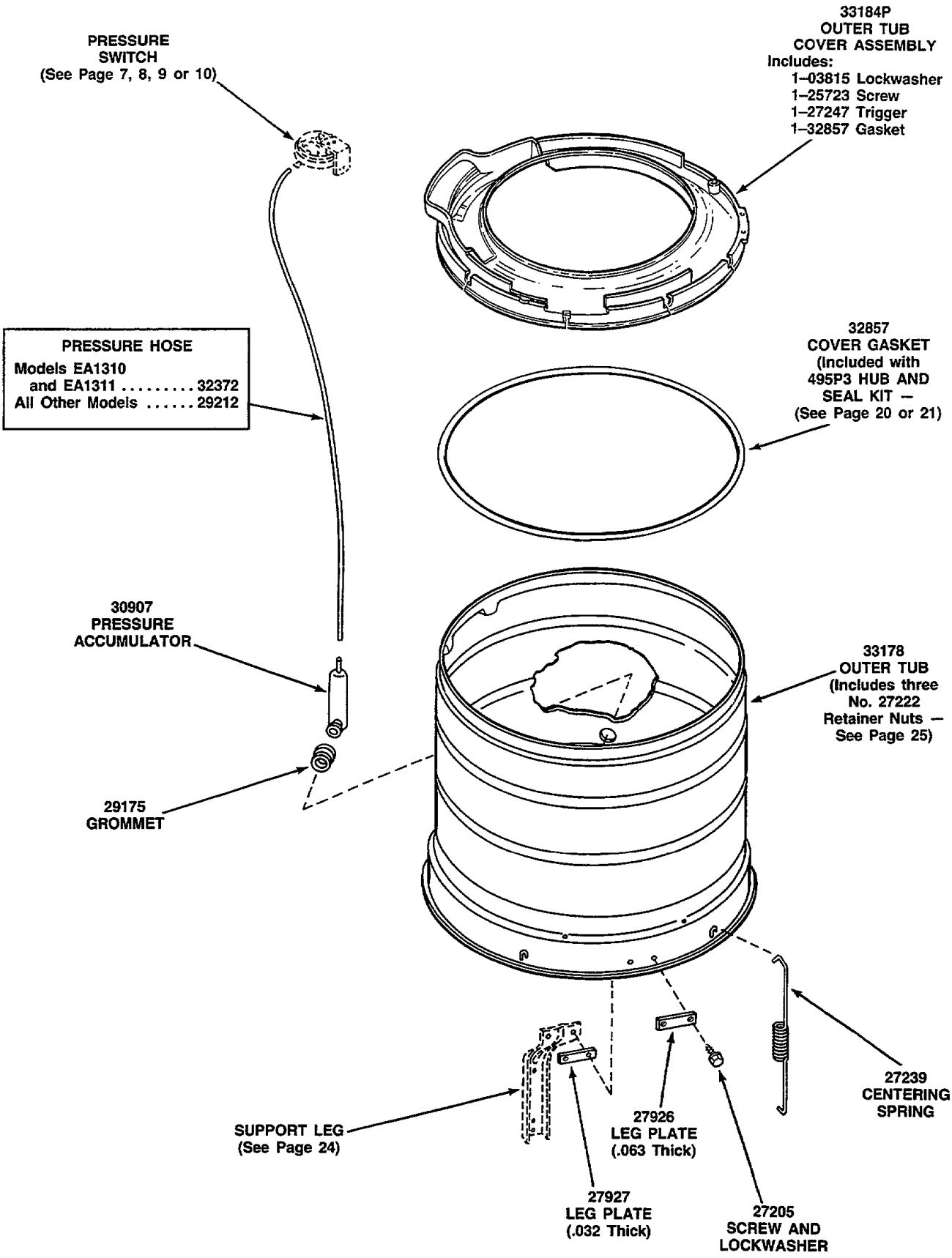
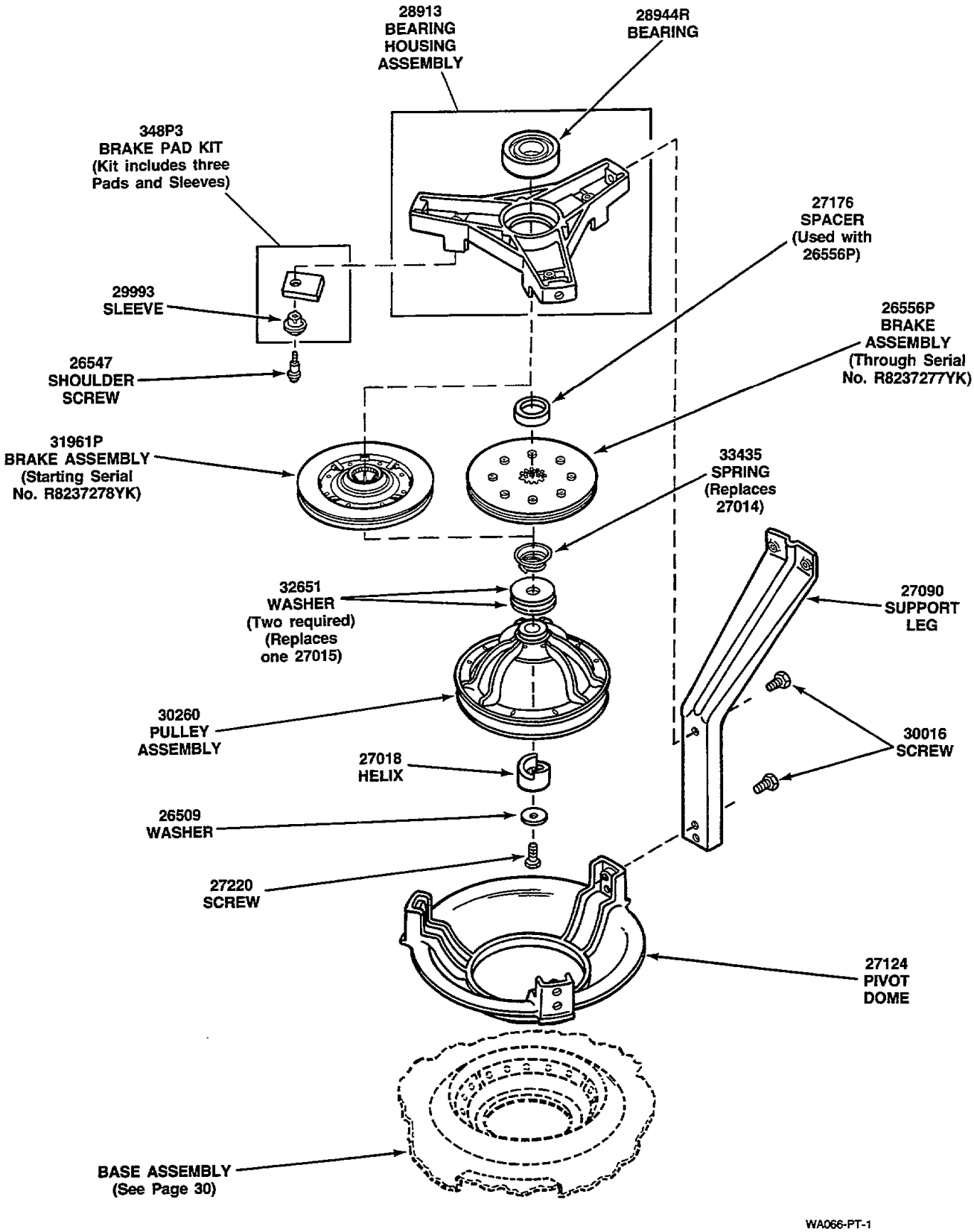
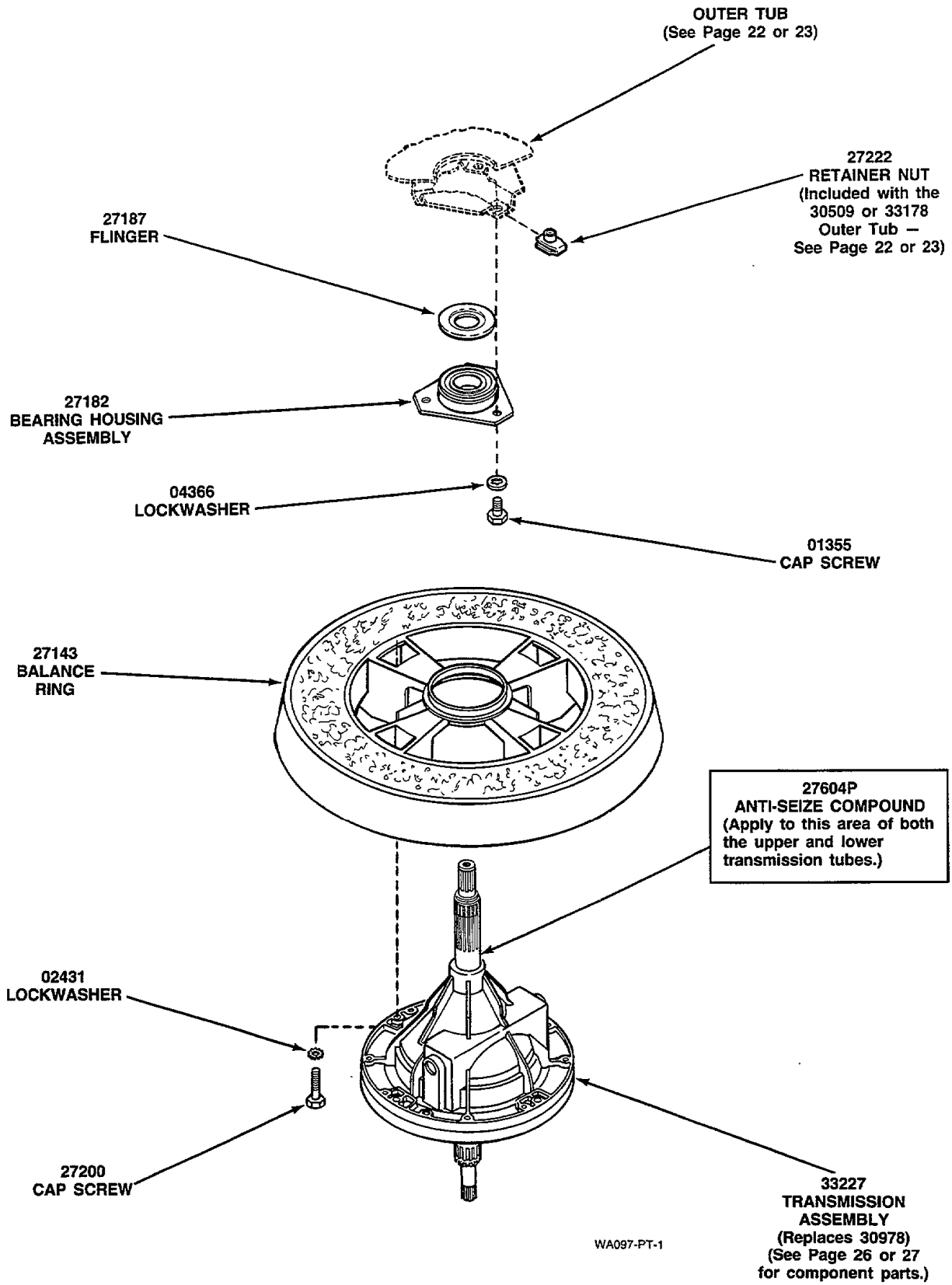


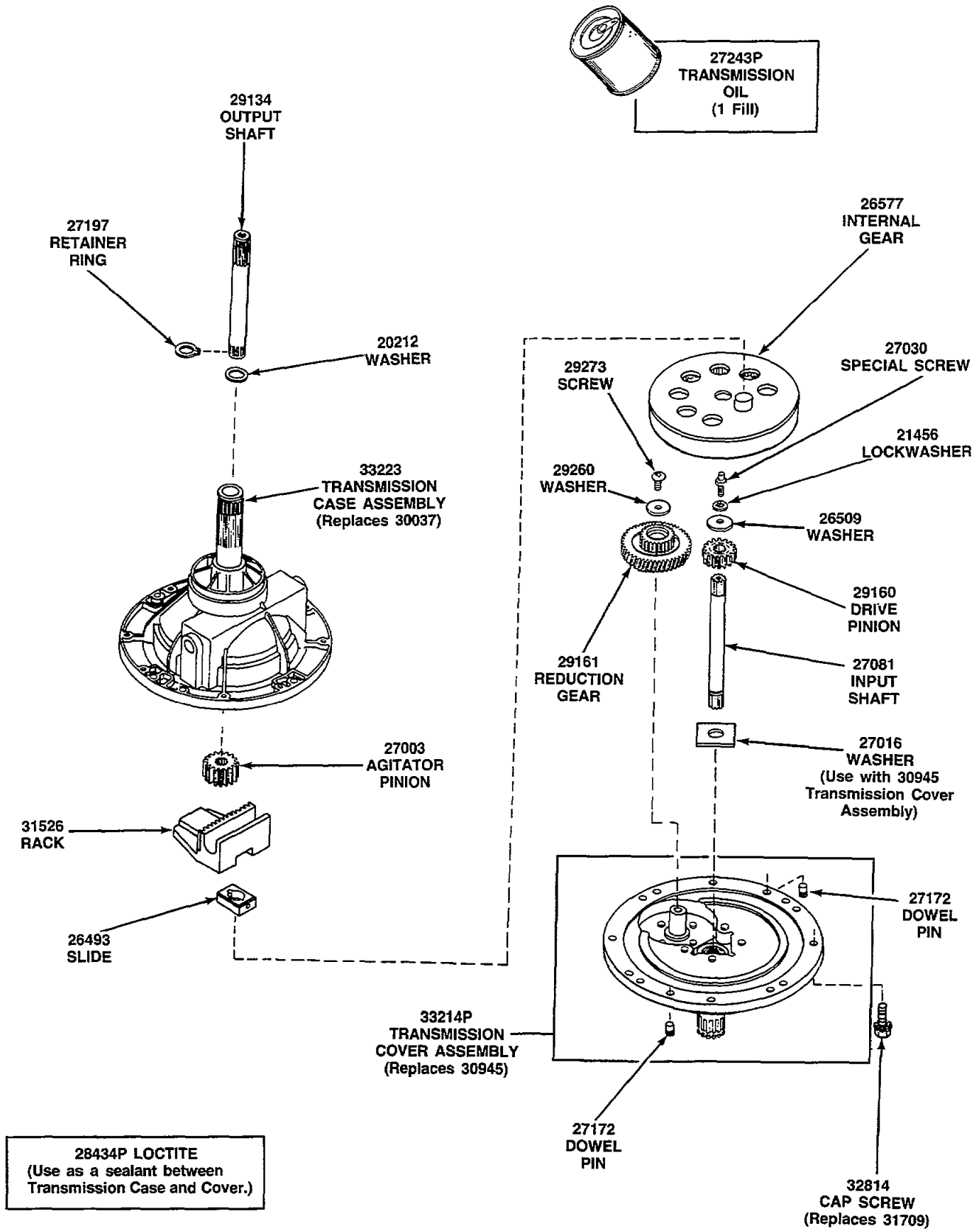
OUTER TUB, COVER AND PRESSURE HOSE
(Starting Serial No. R8237278YK)



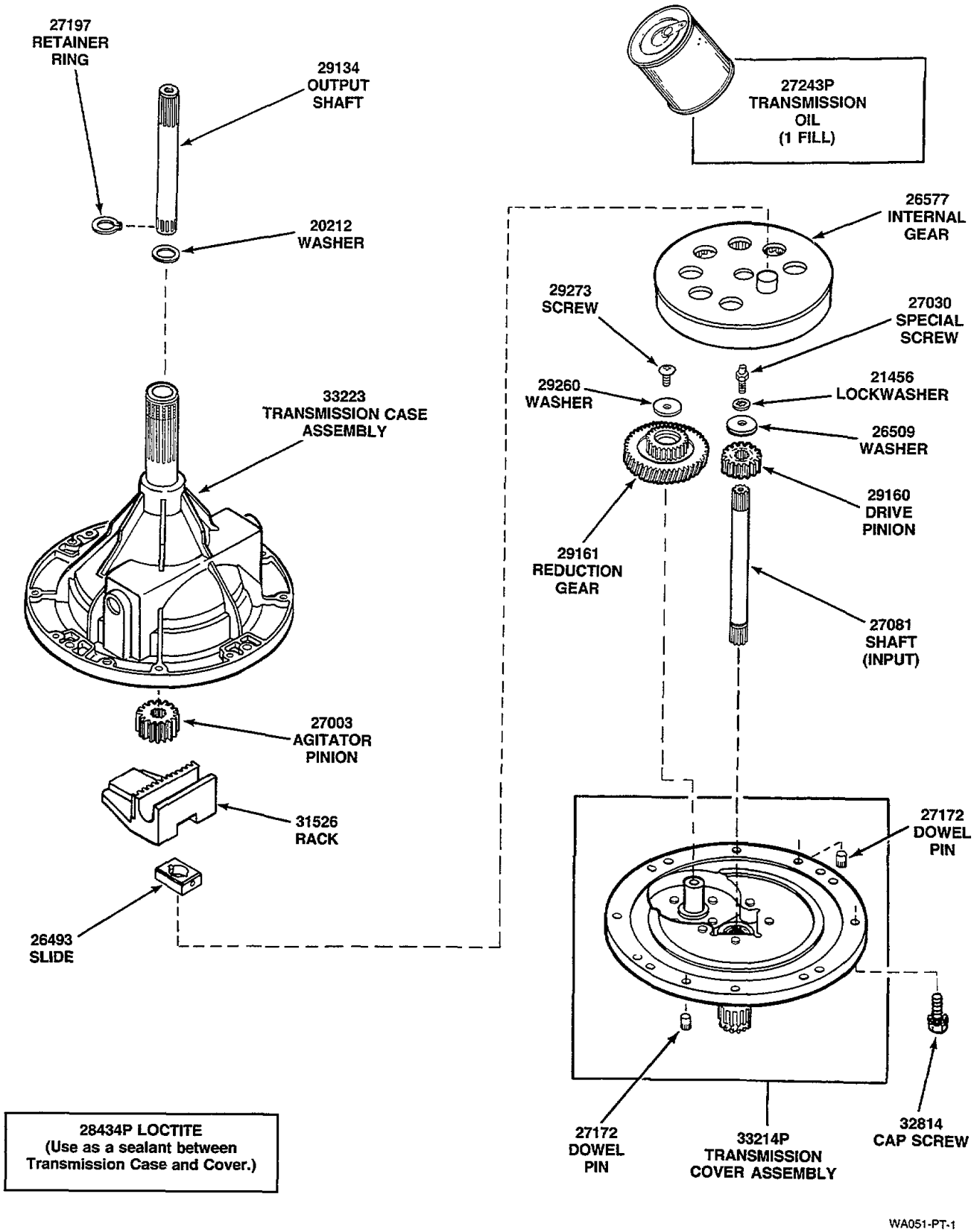
BEARING HOUSING, BRAKE, PULLEY AND PIVOT DOME



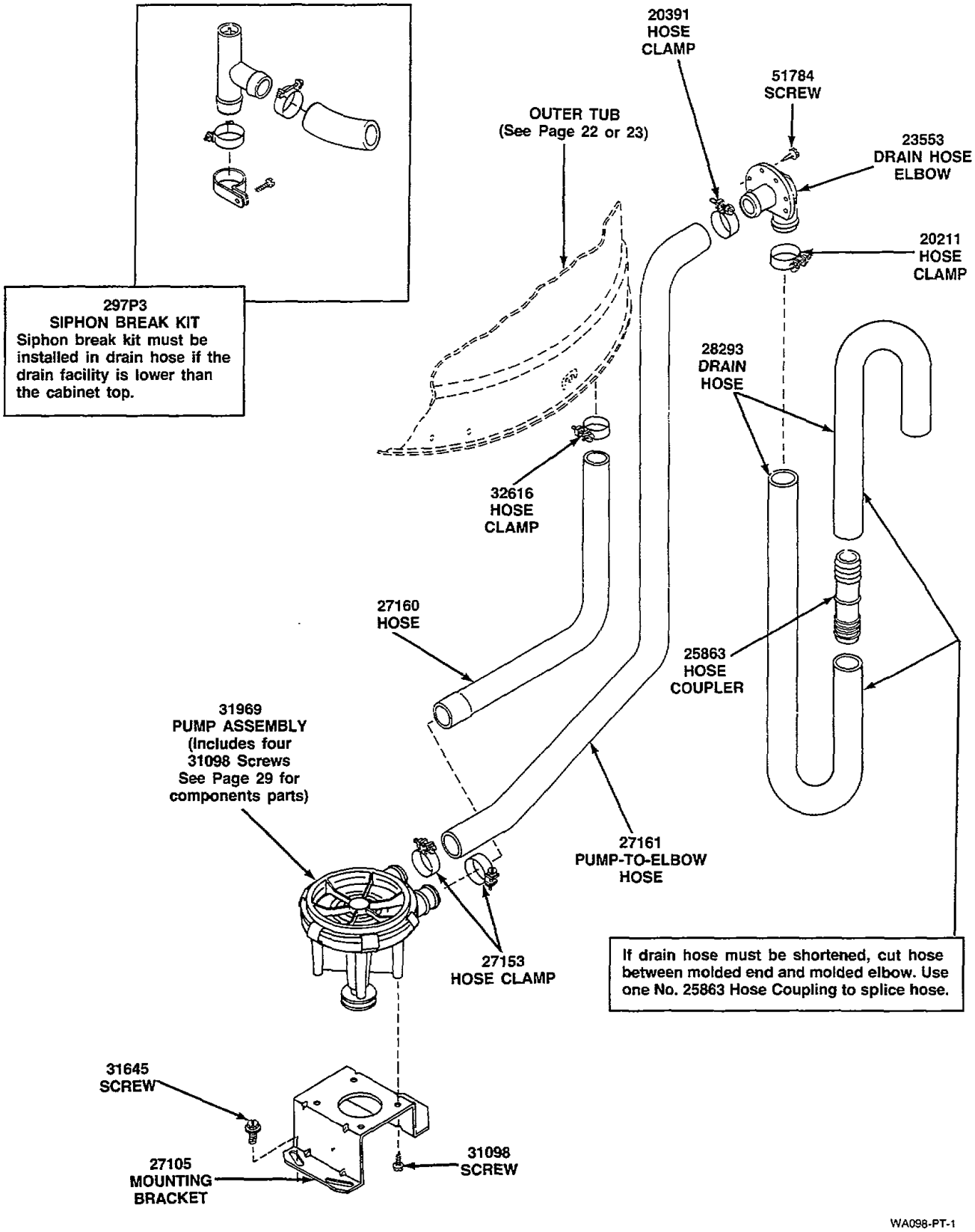
TRANSMISSION ASSEMBLY AND BALANCE RING



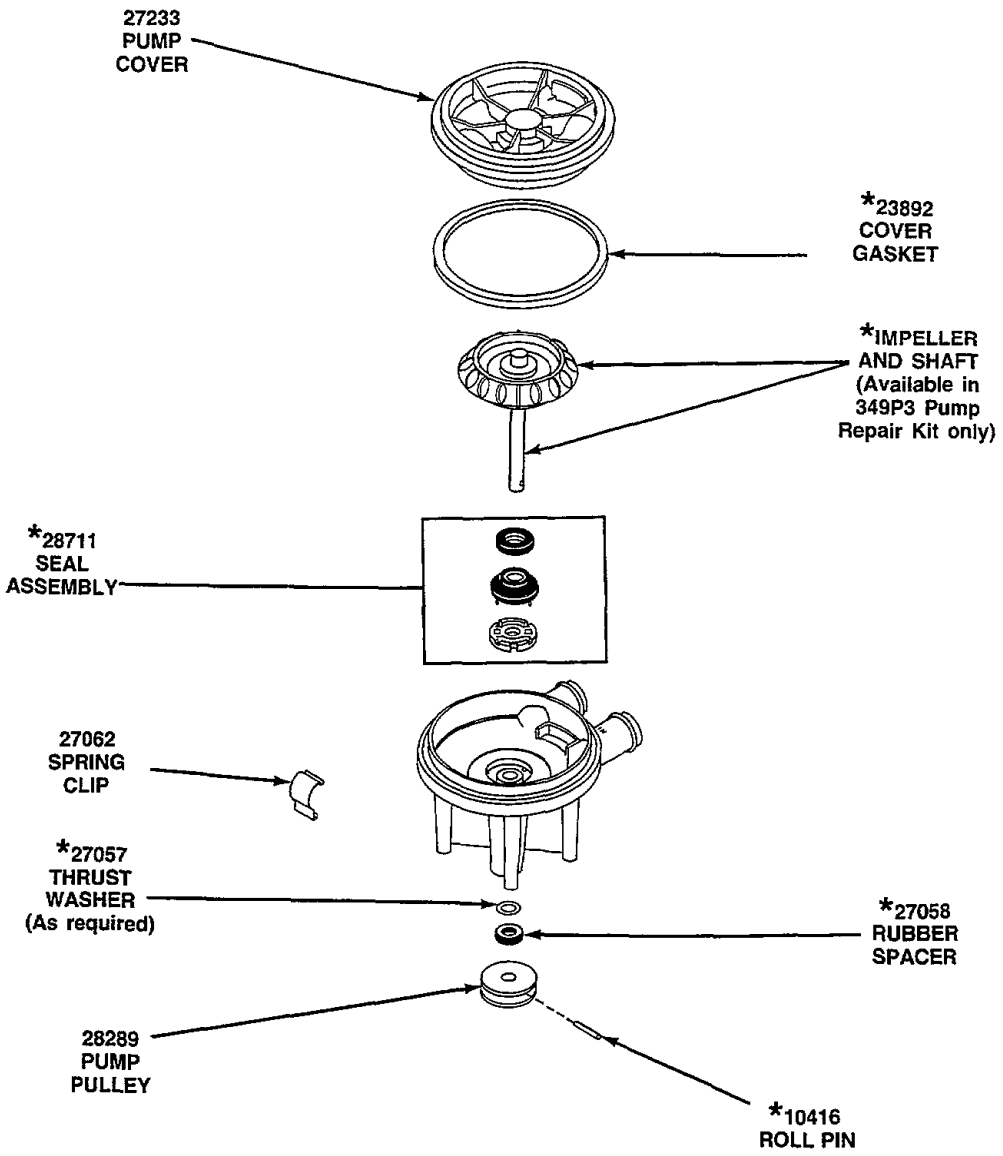
COMPONENTS FOR 30978 TRANSMISSION ASSEMBLY



COMPONENTS FOR 33227 TRANSMISSION ASSEMBLY



PUMP ASSEMBLY, BRACKET, HOSES AND SIPHON BREAK KIT



*349P3 PUMP REPAIR KIT
(Includes all parts marked
with an asterisk.)

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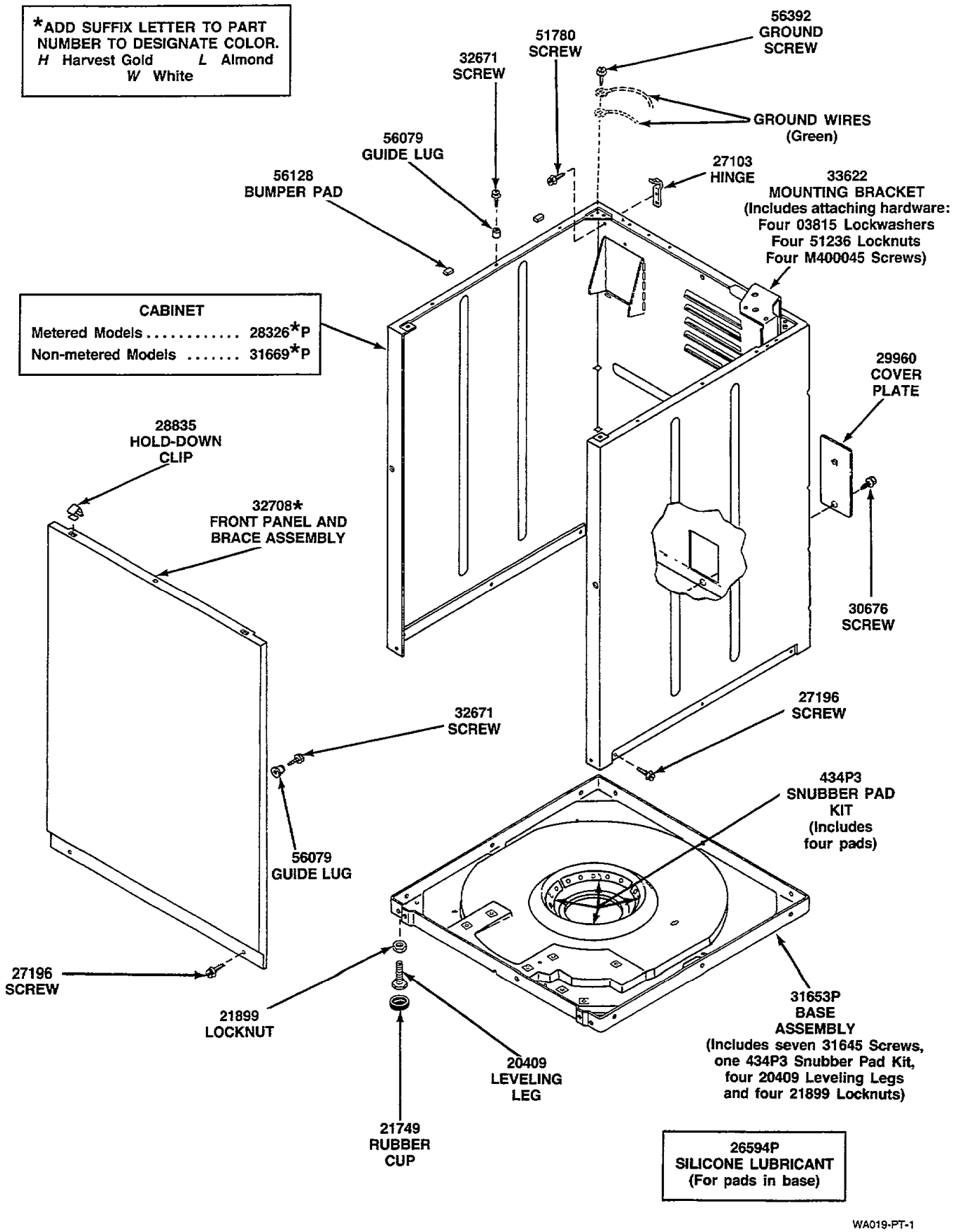
PUMP ASSEMBLY



FRONT PANEL, CABINET AND BASE ASSEMBLY

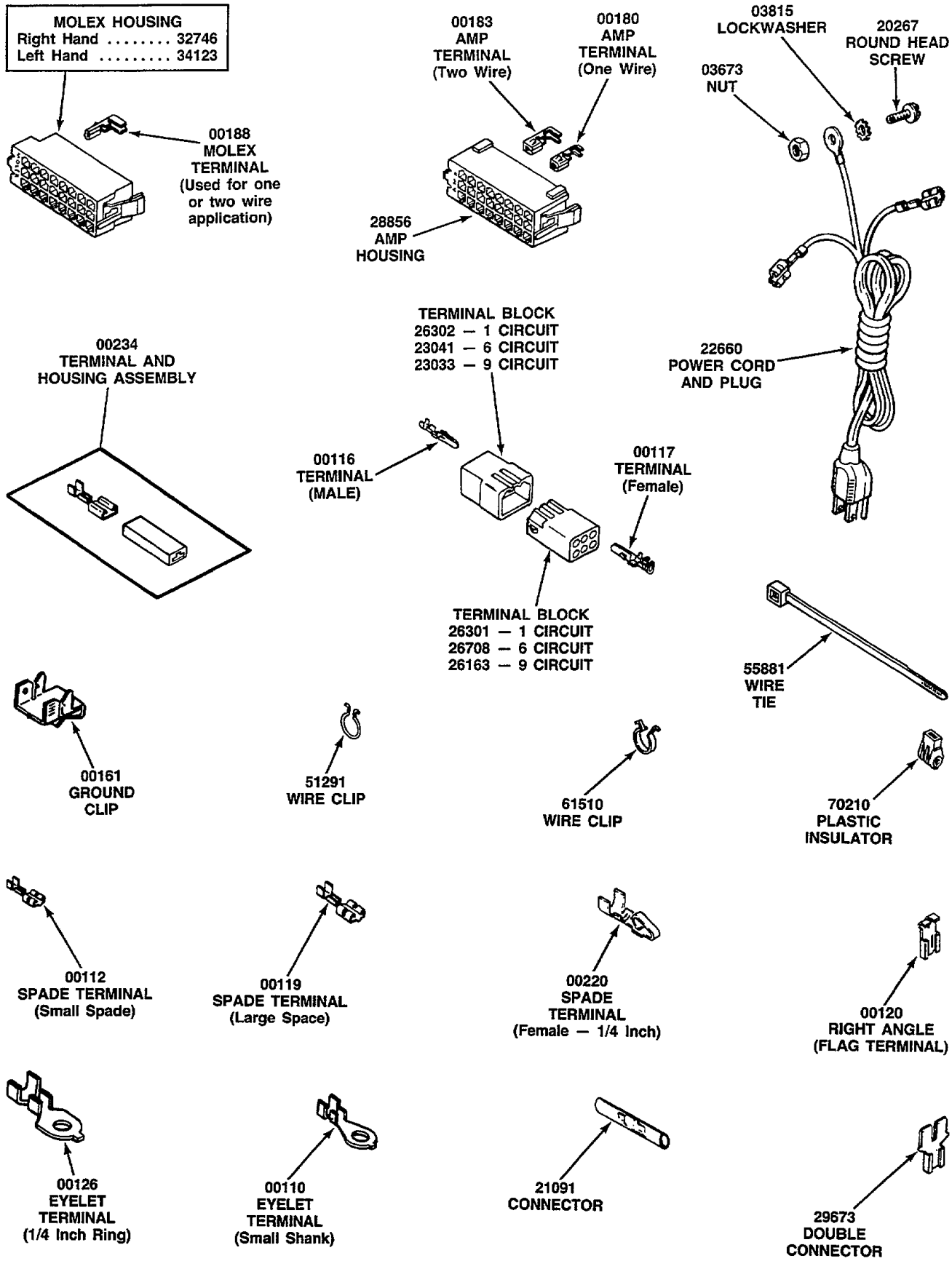
INDIVIDUAL WIRES NOT SERVICED SEPARATELY. ORDER COMPLETE HARNESSES LISTED BELOW, OR ORDER WIRE BY THE FOOT, SEE PAGE 32.

MODEL NUMBER	BASE HARNESS	MIXING VALVE HARNESS	TIMER HARNESS	HOOD HARNESS	LID HARNESS	MOTOR HARNESS
EA1010 and EA1011 through Serial No. R8237277YK	32171P	33828 (Replaces 32173)	28217	32497	32501	28132
EA1011G starting Serial No. R8237278YK	32171P	33828	28217	33804	—	28132
EA1020 and EA1021 through Serial No. R8237277YK	32170P	33828 (Replaces 32173)	28216	32502	32501	28131
EA1020G and EA1021G starting Serial No. R8237278YK	32170P	33828	34092	33805	—	28131
EA1110, EA1110P, EA1111, and EA1111P through Serial No. R8237277YK	32171P	33828 (Replaces 32173)	29279	32455	32496	28132
EA1110G, EA1110T, EA1111G and EA1111T starting Serial No. R8237278YK	32171P	33828	29279	33757	—	28132
EA1120, EA1120P, EA1121 and EA1121P through Serial No. R8237277YK	32170P	33828 (Replaces 32173)	29281	32471	32496	28131
EA1120G, EA1120T, EA1121G and EA1121T starting Serial No. R8237278YK	32170P	33828	29281	33758	—	28131
EA1210 and EA1211 through Serial No. R8237277YK	32171P	33828 (Replaces 32173)	29279	32455	32496	28132
EA1210 starting Serial No. R8237278YK	32171P	33828	29279	33757	—	28132
EA1220, EA1220P and EA1221 through Serial No. R8237277YK	32170P	33828 (Replaces 32173)	29281	32471	32496	28131
EA1220G, EA1220T and EA1221G starting Serial No. R8237278YK	32170P	33828	29281	33758	—	28131
EA1310 and EA1311 through Serial No. R8237277YK	32171P	33828 Replaces 32173)	32477	32554	31989	28132
EA1310G and EA1311G starting Serial No. R8237278YK	32171P	33828	32477	33766	—	28132
EA1420 and EA1421	32170P	—	32491	32641	—	28131
EA1510G	32171P	33828	34270	33757	—	28132
EA1520, EA1520P and EA1521 through Serial No. R8287277YK	32170P	33828 (Replaces 32173)	33426	32471	32496	28131
EA1520G, EA1520T and EA1521G starting Serial No. R8237278YK	32170P	33828	33426	33758	—	28131

Order the individual wire color and gauge by the part number listed below. Order wire by the foot and terminals and connectors as required. It is recommended when applying terminals to wires that the terminals be soldered to the wires.

IMPORTANT: Always replace wires with proper gauge and color.

Part Number	Wire Gauge	Wire Color	Part Number	Wire Gauge	Wire Color
45000	18 Gauge Wire	White	45064	18 Gauge Wire	Blue/White
45001	18 Gauge Wire	Black	45065	18 Gauge Wire	Blue/Black
45002	18 Gauge Wire	Red	45066	18 Gauge Wire	Blue/Red
45003	18 Gauge Wire	Brown	45074	18 Gauge Wire	Gray/Black
45004	18 Gauge Wire	Pink	45080	18 Gauge Wire	Gray/Yellow
45005	18 Gauge Wire	Orange	45083	18 Gauge Wire	Yellow/Black
45006	18 Gauge Wire	Blue	45088	18 Gauge Wire	Yellow/Blue
45007	18 Gauge Wire	Gray	45091	18 Gauge Wire	Tan/White
45008	18 Gauge Wire	Yellow	45100	18 Gauge Wire	Green
45009	18 Gauge Wire	Tan	45103	18 Gauge Wire	Green/Red
45010	18 Gauge Wire	White/Black	45104	18 Gauge Wire	Purple
45011	18 Gauge Wire	White/Red	45250	14 Gauge Wire	White
45012	18 Gauge Wire	White/Brown	45251	14 Gauge Wire	Black
45014	18 Gauge Wire	White/Orange	45255	14 Gauge Wire	Orange
45015	18 Gauge Wire	White/Blue	45256	14 Gauge Wire	Blue
45016	18 Gauge Wire	White/Gray	45258	14 Gauge Wire	Yellow
45019	18 Gauge Wire	Black/White	45333	14 Gauge Wire	Yellow/Black
45022	18 Gauge Wire	Black/Pink	45350	14 Gauge Wire	Green
45026	18 Gauge Wire	Black/Yellow	45353	14 Gauge Wire	Green/White
45029	18 Gauge Wire	Red/Black	45375	12 Gauge Wire	White
45035	18 Gauge Wire	Red/Yellow	45376	12 Gauge Wire	Black
45037	18 Gauge Wire	Brown/White	45377	12 Gauge Wire	Red
45039	18 Gauge Wire	Brown/Red	45378	12 Gauge Wire	Brown
45044	18 Gauge Wire	Brown/Yellow	45380	12 Gauge Wire	Orange
45047	18 Gauge Wire	Pink/Black	45381	12 Gauge Wire	Blue
45051	18 Gauge Wire	Pink/Blue	45383	12 Gauge Wire	Yellow
45053	18 Gauge Wire	Pink/Yellow	45404	12 Gauge Wire	Red/Black
45056	18 Gauge Wire	Orange/Black	45422	12 Gauge Wire	Pink/Black
45060	18 Gauge Wire	Orange/Blue	45431	12 Gauge Wire	Orange/Black
45061	18 Gauge Wire	Orange/Gray	45475	12 Gauge Wire	Green
			45480	12 Gauge Wire	Purple



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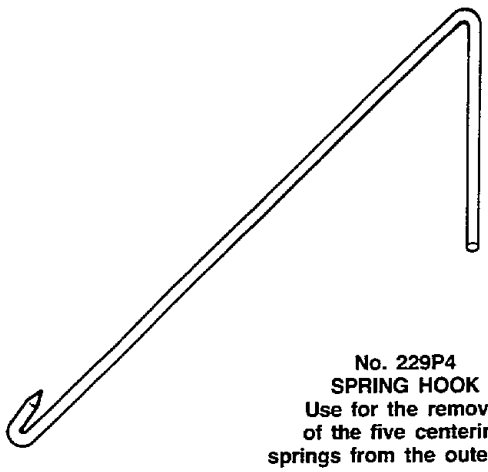
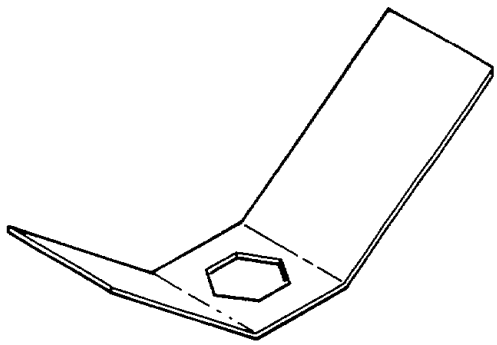
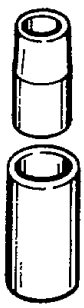
POWER CORD AND TERMINALS



No. 229P4
SPRING HOOK
Use for the removal
of the five centering
springs from the outer tub.



No. 237P4
HEX WRENCH
Use to remove hex
locknut from washtub hub.



No. 242P4
BRAKE SPRING
INSTALLER
Use to install
brake spring.

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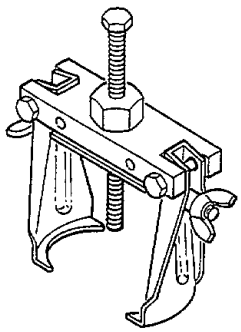
Special Tools



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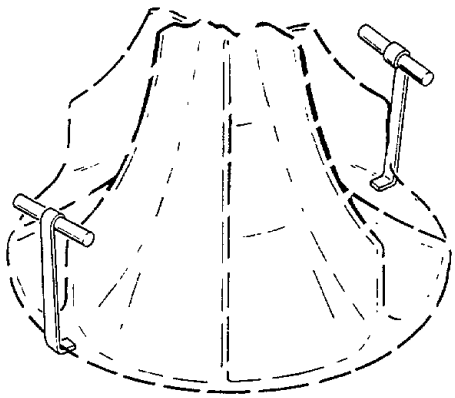
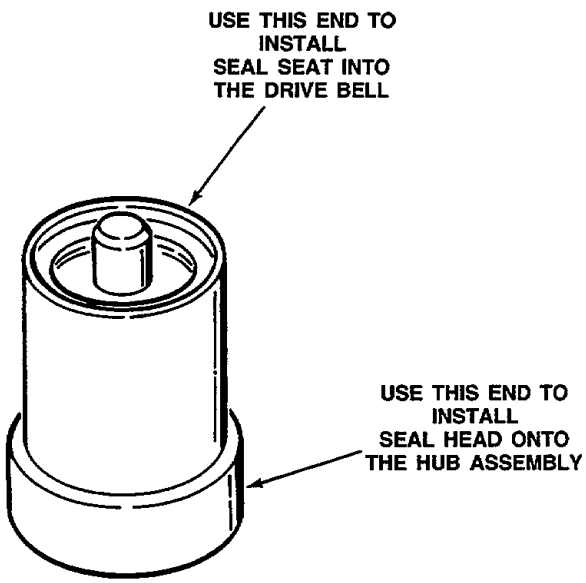
No. 253P4
BELL TOOL
Use for the removal and installation of drive bell to transmission shaft.



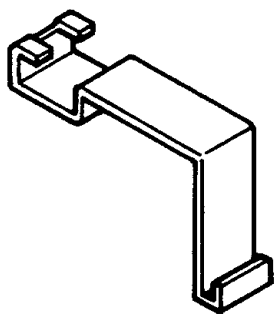
WA023-PT-1

No. 254P4P
AGITATOR HOOKS
(Set of two)
Use to remove agitator from drive bell by hand.



WA024-PT-1

No. 255P4
SEAL TOOL
Use to install the seal seat and the seal head.



WA100-PT-1

No. 273P4
OUTER TUB COVER AND GASKET TOOL
Use to remove 33184P Outer Tub Cover from Outer Tub and to install 32857 Gasket in outer tub cover.

SECTION II
Grounding

⚠WARNING

Whenever ground wires are removed during servicing, those ground wires must be reconnected to insure that the washer is properly grounded and to reduce the risk of electrical shock.

1. WALL RECEPTACLE POLARITY CHECK.

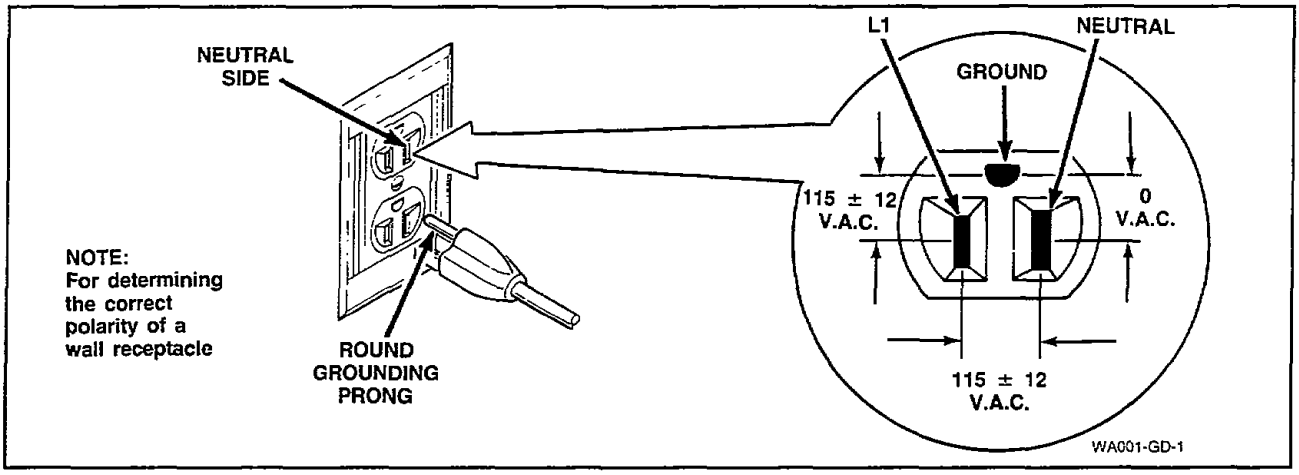


Figure 1

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

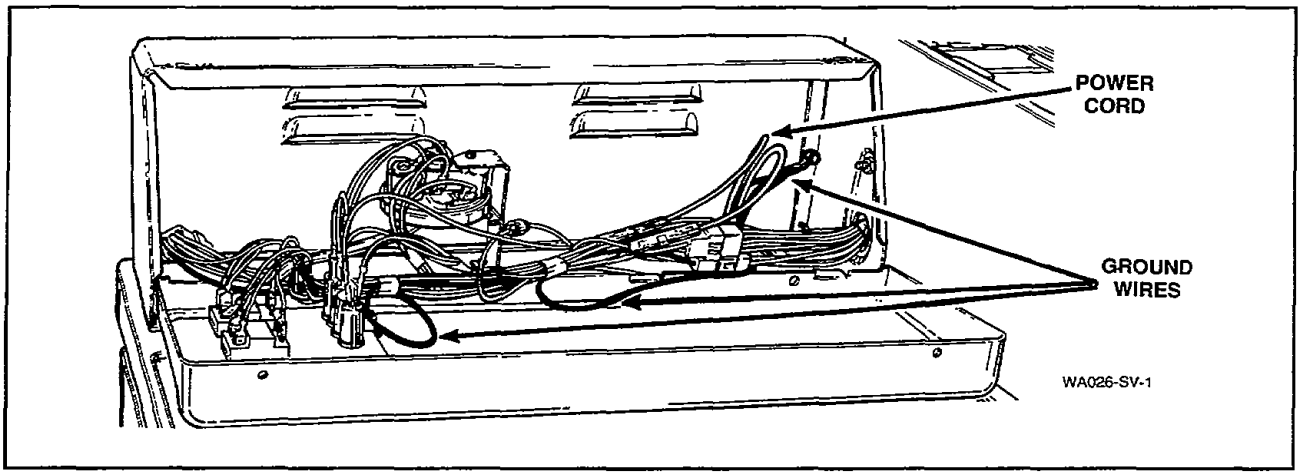


Figure 2

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

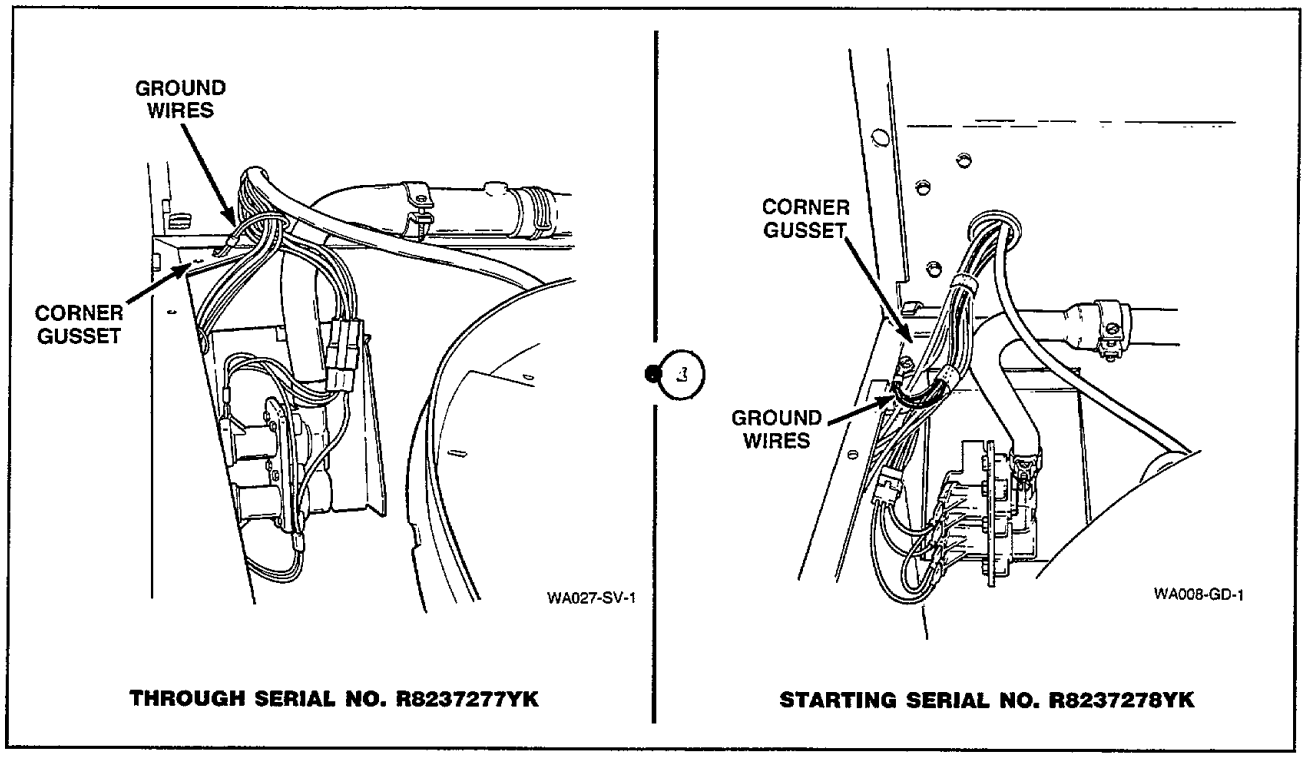


Figure 3

4. MOTOR TO MOUNTING BRACKET.

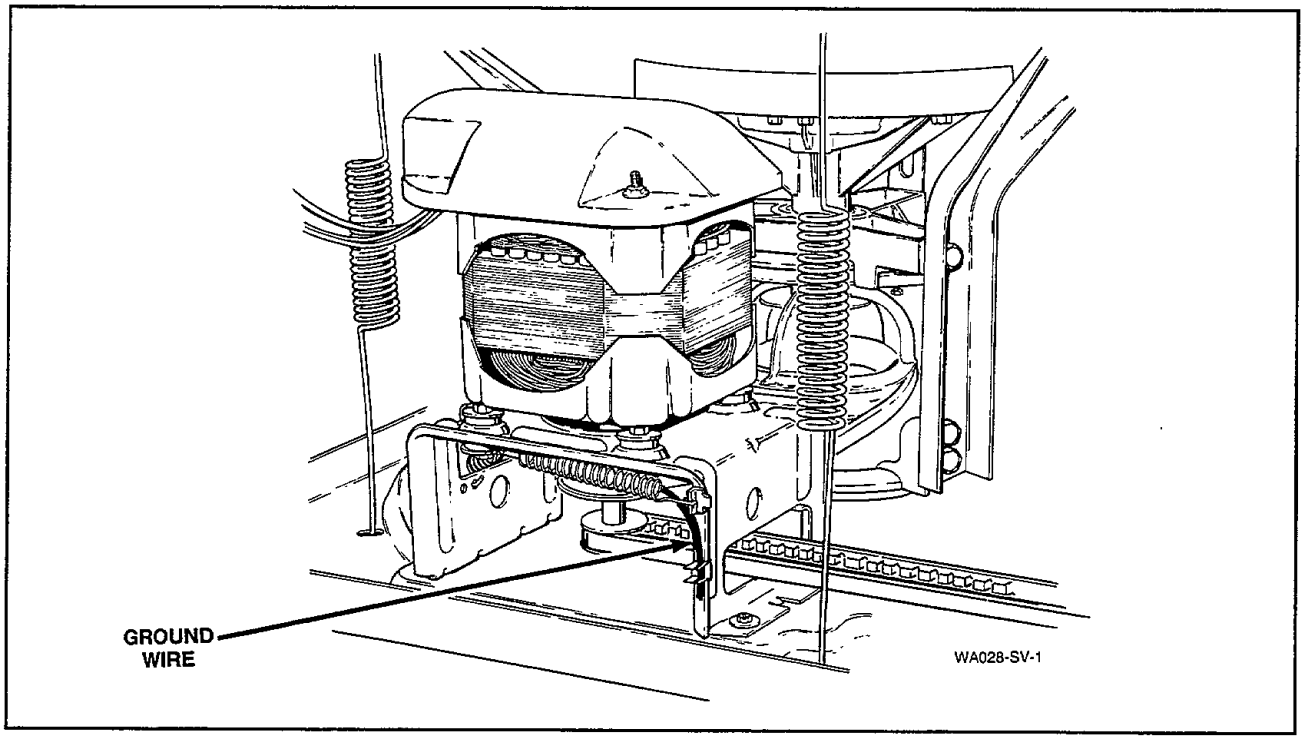


Figure 4

SECTION III
Service Procedures

⚠WARNING

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

Never energize the electrical power to the washer with any of the 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, those ground wires must be reconnected to insure that the washer is properly grounded and to reduce the risk of fire, electric shock, or personal injury.

5. CONTROL PANEL (Refer to *Figure 5)*

a. Remove two control panel attaching screws and lift assembly off cabinet top.

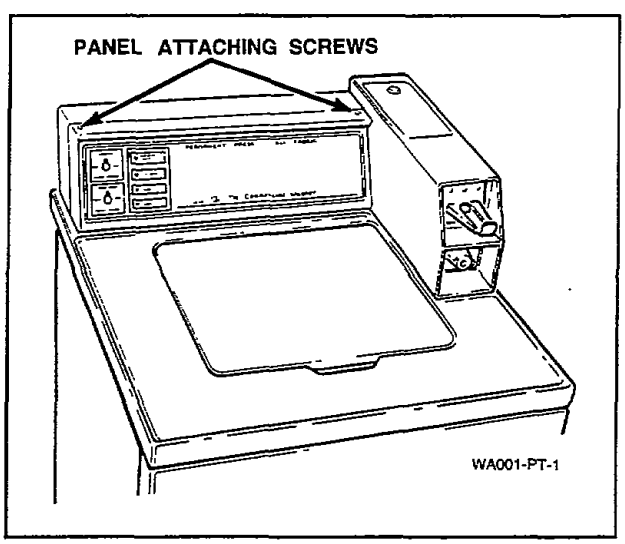


Figure 5

6. SPEED OR WASH TEMPERATURE SWITCH

a. Remove two control panel attaching screws and lift assembly off cabinet top, *Figure 5.*
b. Loosen setscrew holding switch knob to switch shaft, *Figure 6.*
c. Remove knurled nut holding switch to control panel, *Figure 6.*

NOTE: Lockwasher must be between switch and control panel when installing switch, *Figure 6.*

d. Disconnect wires from switch.

NOTE: Refer to appropriate wiring diagram when rewiring switch.

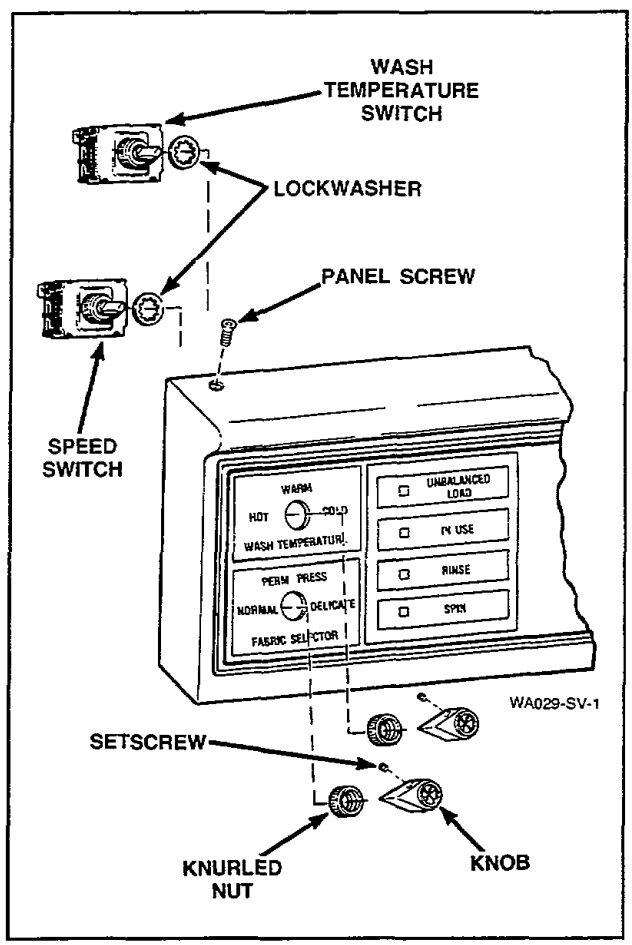


Figure 6

7. INDICATOR LIGHTS — UNBALANCED LOAD, IN USE, RINSE OR SPIN

a. Remove two control panel attaching screws and lift assembly off cabinet top.
b. Disconnect wires from light.

NOTE: Refer to wiring diagram when rewiring light.

c. Squeeze locking tabs together and pull light out from rear of panel.

8. TIMER ASSEMBLY — Metered Models

a. Unlock and remove the service door.
b. Remove the inner timer bracket cap screw, *Figure 7.*
c. Slide the timer and bracket to the left to disengage the bracket from the shoulder screw. Lift timer and bracket up and out of the meter case through the service door opening as far as wires will permit.

NOTE: DO NOT attempt to repair the timer.

d. Disengage wire harness terminal block plug from the timer by pressing in on the movable locking tabs (located on each side of terminal block plug), *Figure 8.* Then pull the terminal block plug away from the timer.

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

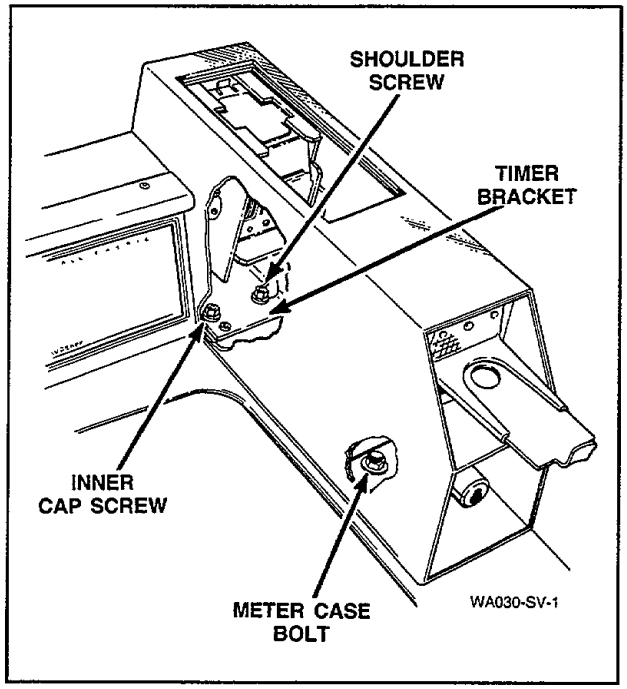


Figure 7

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

e. Remove two screws holding timer to bracket, *Figure 8.*
f. Loosen setscrew holding clutch to timer shaft, *Figure 9.*

NOTE: When installing clutch, be sure clutch moves freely after setscrews are tightened.

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

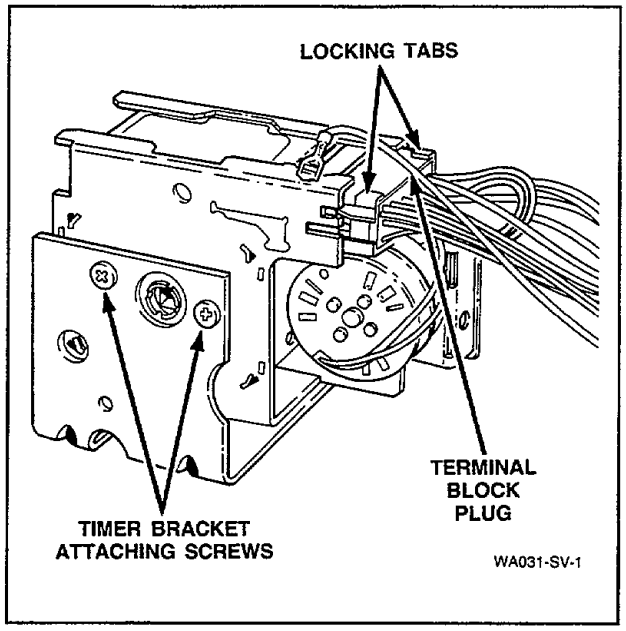


Figure 8

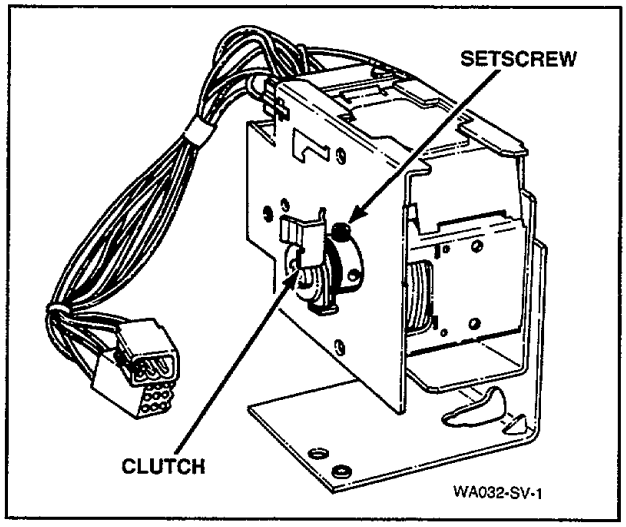


Figure 9

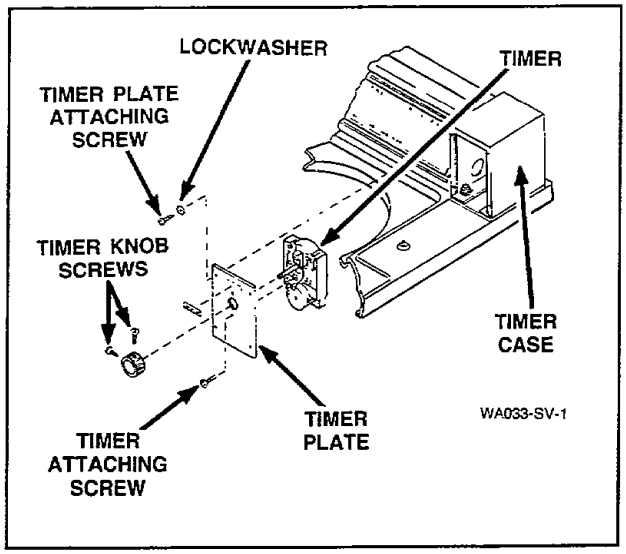


Figure 10

9. TIMER ASSEMBLY — Nonmetered Models (Refer to *Figure 10)*

a. Loosen two setscrews holding timer knob to timer shaft.
b. Remove four screws and lockwashers holding timer and plate to timer case.

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

c. Pull timer and plate out as far as wires will permit.

NOTE: Disconnect ground wire from rear of timer.

⚠WARNING

Whenever ground wires are removed during servicing, those ground wires must be reconnected to insure that the washer is properly grounded and to reduce the risk of fire, electric shock or personal injury.

d. Pull wire harness and blocks through into timer housing, then disconnect timer harness from control hood harness at quick disconnect block.
e. Remove two screws holding timer to timer plate.
f. Disconnect wires from timer.

NOTE: Refer to appropriate wiring diagram when rewiring timer.

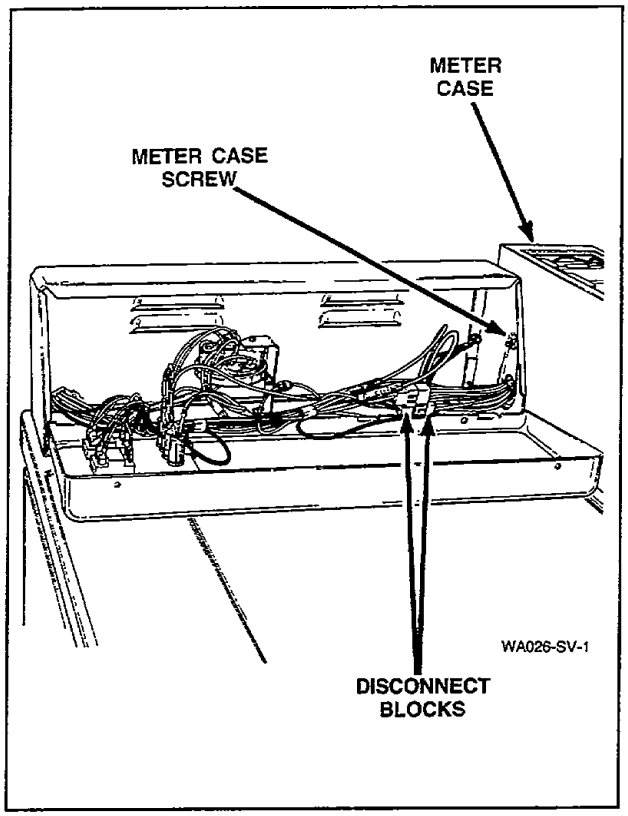


Figure 11

10. METER CASE — Metered Models

a. Unlock and remove service door.
b. Remove the inner timer bracket cap screw, *Figure 7.*
c. Slide timer and bracket to the left to disengage bracket from shoulder screw.
d. Remove two control panel attaching screws, *Figure 5,* and lift assembly off cabinet top.
e. Disconnect timer harness from control hood harness at disconnect blocks, *Figure 11.*
f. Remove timer, bracket and harness out through service door opening.
g. Remove cap screw, lockwashers and nut holding meter case to end of control hood, *Figure 11.*
h. Remove coin drawer.
i. Open loading door, hold hand under front meter case bolt, Figure 7. Remove nut and lockwasher.
j. Remove the shoulder screw from inside meter case.

NOTE: When installing meter case, shoulder screw must be installed in the outer hole, *Figure 7,* to enable the timer bracket to slide under the screw head.

k. Carefully remove meter case from cabinet top.

11. TIMER CASE — Nonmetered Models

a. Remove timer assembly, *paragraph 9.*
b. Remove the two control panel attaching screws and lift assembly off cabinet top, *Figure 5.*
c. Remove cap screw, lockwashers and nut holding timer case to control hood, *Figure 12.*
d. Remove two screws from bottom edge of front panel, *Figure 9.*
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 13.*
f. Remove two cabinet top hold-down screws, *Figure 13.*
g. Tape loading door closed and lift cabinet top to a vertical position.
h. Remove carriage bolts, washer, lockwashers, and nuts holding timer case to cabinet top.
i. Support timer case and remove screw and fiber washing holding rear of case to cabinet top.

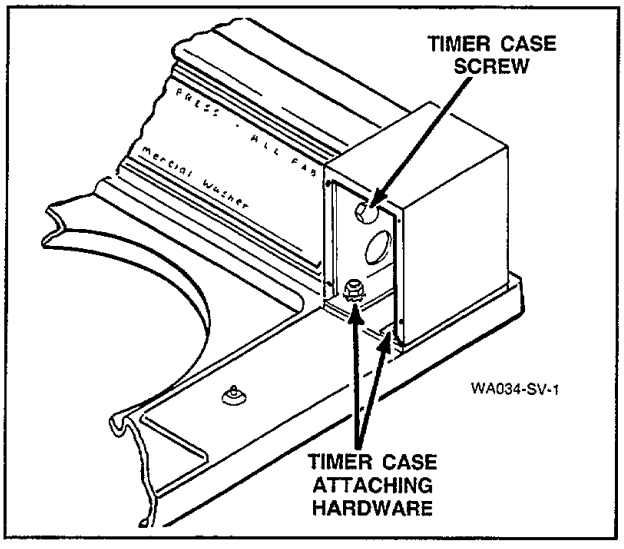


Figure 12

12. PRESSURE SWITCH

a. Remove the two control panel attaching screws and lift assembly off cabinet top.
b. Remove two screws holding switch to mounting bracket.
c. Pull the switch out of the control hood far enough to disconnect pressure hose and wires from switch.

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

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

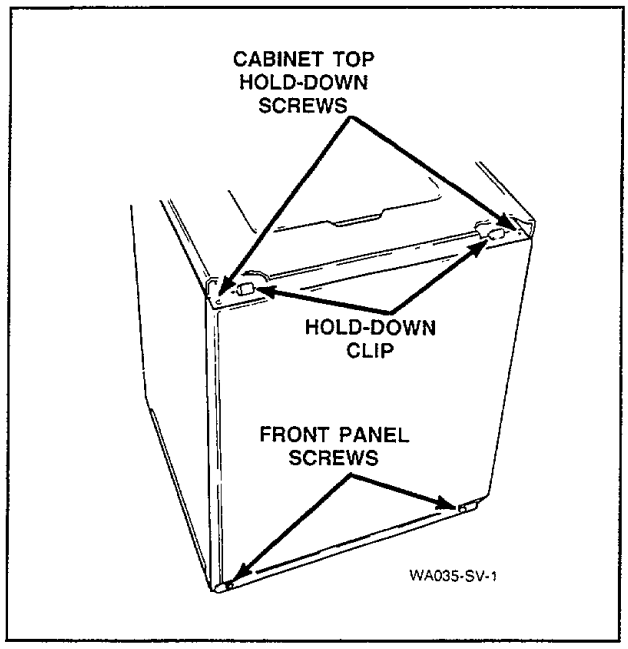


Figure 13

13. DRAIN HOSE ELBOW (Refer to *Figure 14)*

a. Loosen hose clamp and remove drain hose from elbow.
b. Remove screws holding elbow to rear of washer cabinet.
c. Pull elbow out through opening in cabinet far enough to permit loosening inner clamp, then remove elbow from inner hose.

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

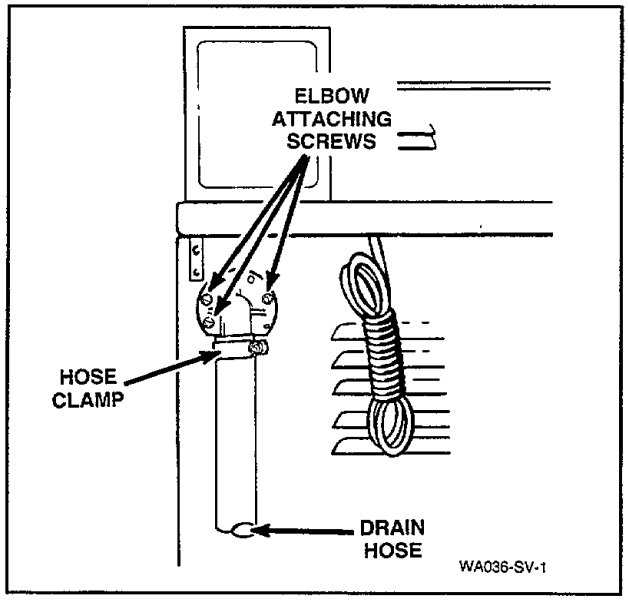


Figure 14

14. LOADING DOOR (Refer to *Figure 15)*

Through Serial No. R8237277YK

1. Open loading door, *Figure 15.*
2. Depress tab on either hinge, then slide hinge out of loading door and bushing in cabinet top.
3. Tilt loading door slightly and slide door and hinge out of opposite bushing.

Starting Serial No. R8237278YK

1. Open loading door, *Figure 15.*
2. Remove two screws holding the left hinge to the door and remove hinge, *Figure 15.*
3. With loading door raised to the vertical position, swing left side of door toward fornt of washer, *Figure 16,* procedure one.
4. Rotate loading door so door is upside down, *Figure 16,* procedure two.
5. Remove loading door, right door hinge and bushing from cabinet top, *Figure 16,* procedure three.

NOTE: Reverse procedures when installing the door.

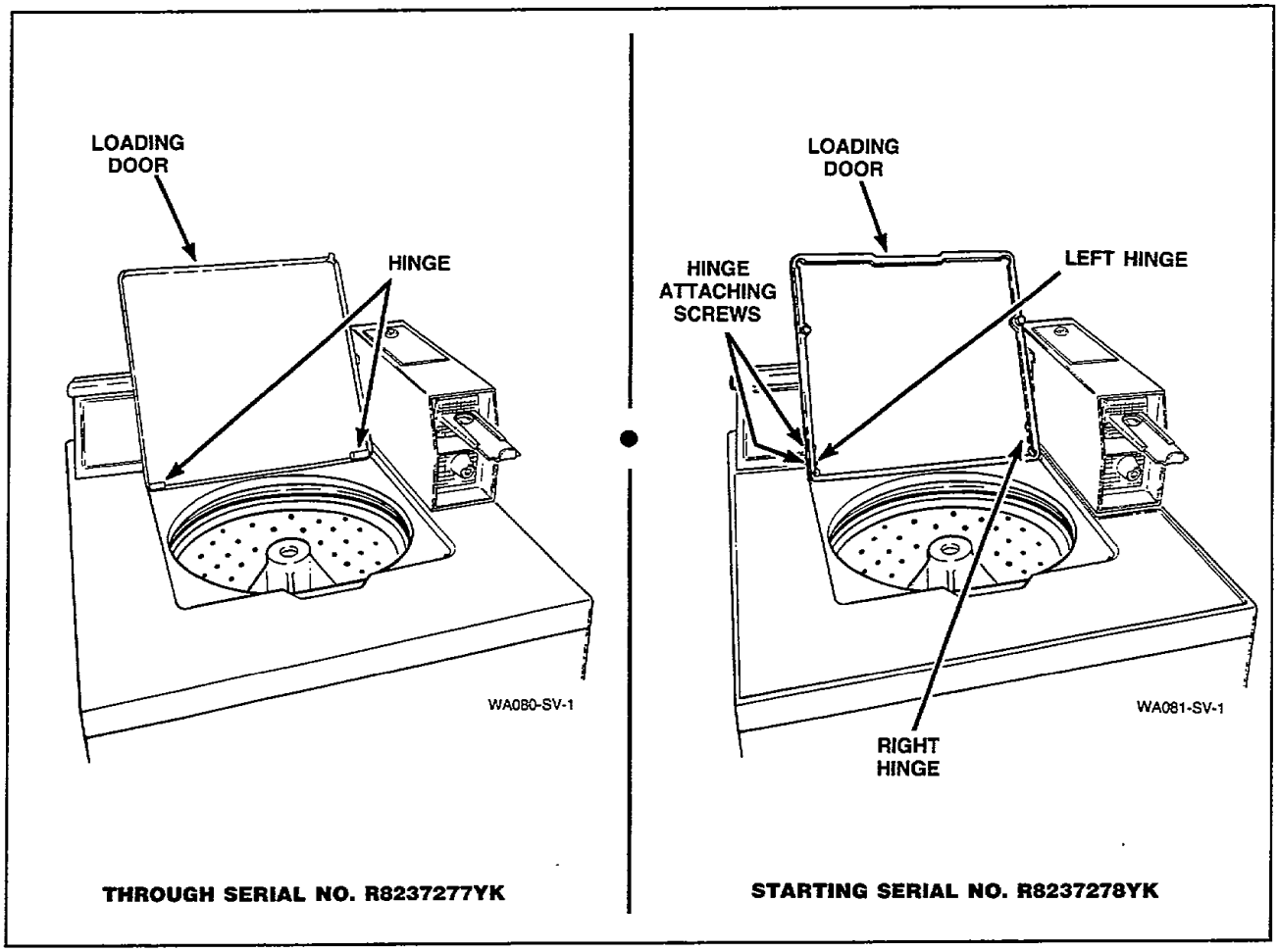
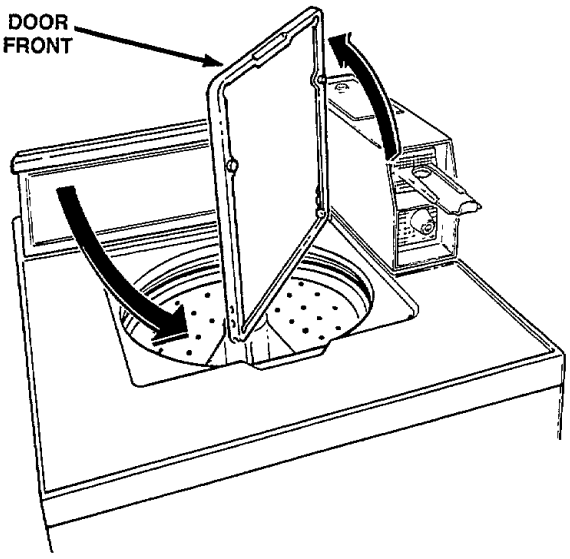


Figure 15

PROCEDURE ONE



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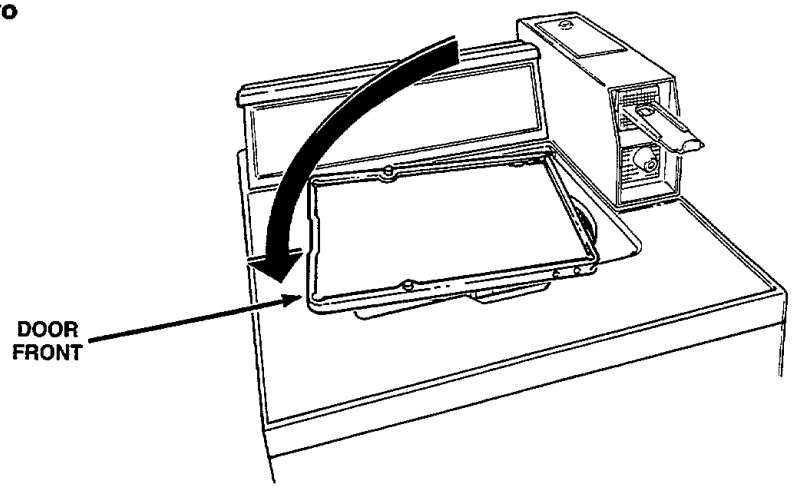
PROCEDURE TWO



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PROCEDURE THREE

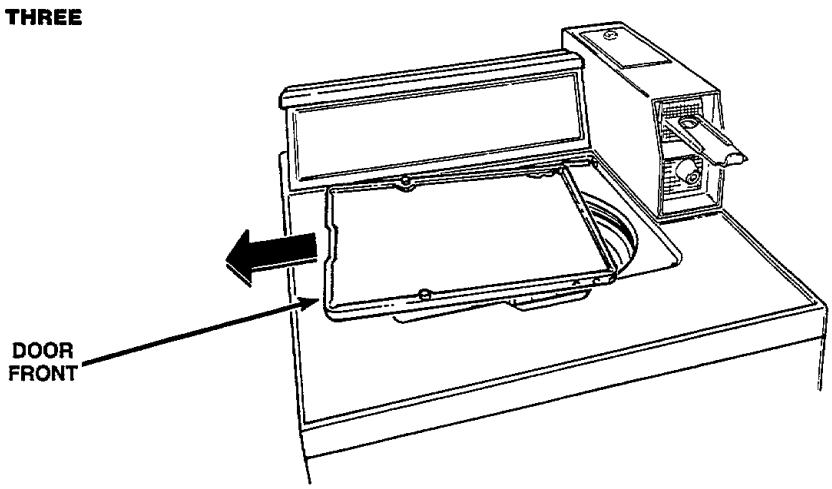

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Figure 16

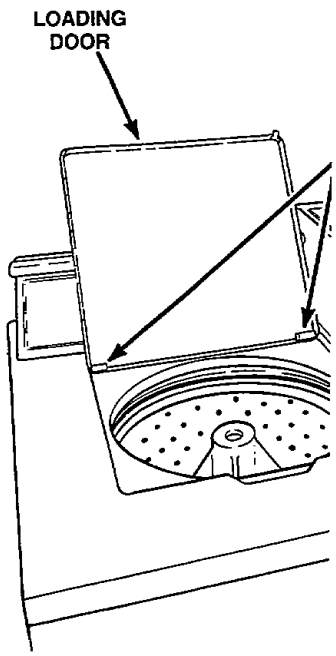
14. LOADING DOOR (Refer to

Through Serial No. R82

1. Open loading door, *Figur*
2. Depress tab on either hing out of loading door and bu
3. Tilt loading door slightly a hinge out of opposite bus

Starting Serial No. R82

1. Open loading door, *Figur*
2. Remove two screws holdir the door and remove hinc
3. With loading door raised position, swing left side o of washer, *Figure 16,* pro



THROUGH SERIAL NO. R

15. GRAPHICS OVERLAY (Refer to *Figure 6)*

a. Loosen setscrews holding speed and wash temperature switch knobs to switch shafts.
b. Remove knurled nuts holding each switch to control panel.

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

c. Remove graphics overlay.

16. AGITATOR

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 17.

IMPORTANT: Hooks should be positioned 180° 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.

17. AGITATOR DR ASSEMBLY

⚠WARN

To reduce the injury to perso power cord bef If water is pre and pump out remove the dri assembly.

a. Open loadinc
b. To remove tl agitator hook edge of the a

IMPORTANT: Hook each other, and mus vane for greater sta between the vane ar occur.

c. Using a rockir lift the agitatc

d. Remove the s top side of th

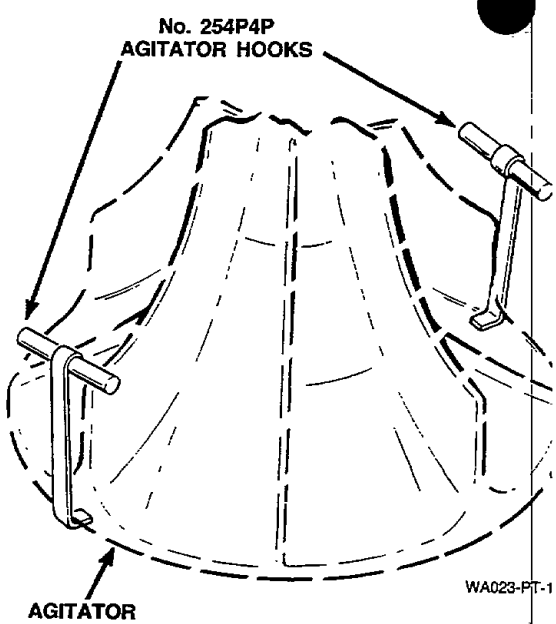


Figure 17

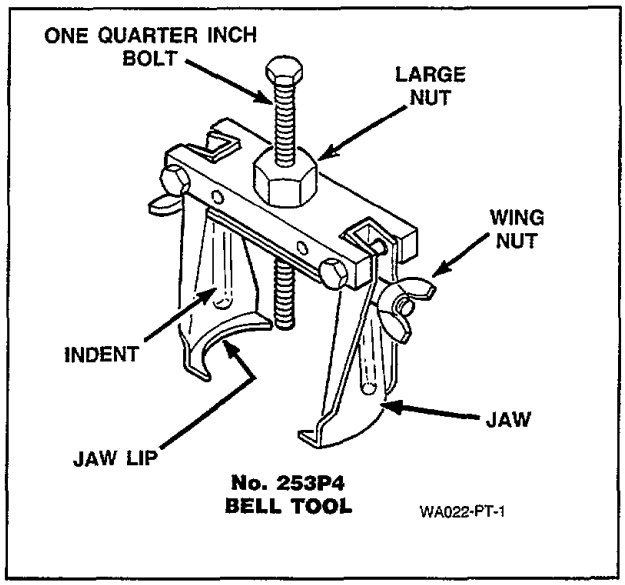


Figure 18

NOTE: To remove the drive bell from the transmission shaft will require using the No. 253P4 Drive Bell Tool, *Figure 18.*

e. Back the one quarter inch bolt out of tool approximately three quarters of the way.
f. Place the tool over the bell making sure the indent of the jaw lines up with the wide slots on the bell, *Figure 19.*
g. Screw the bolt down through the hole in the top of the bell until the bolt bottoms out in the hole of the shaft.
h. 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 wing nuts to hold the jaws firmly against the drive bell, *Figure 19.*
i. Use an adjustable wrench and turn the large nut on the tool **COUNTERCLOCKWISE** to pull the drive bell from the transmission shaft, *Figure 20.*

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

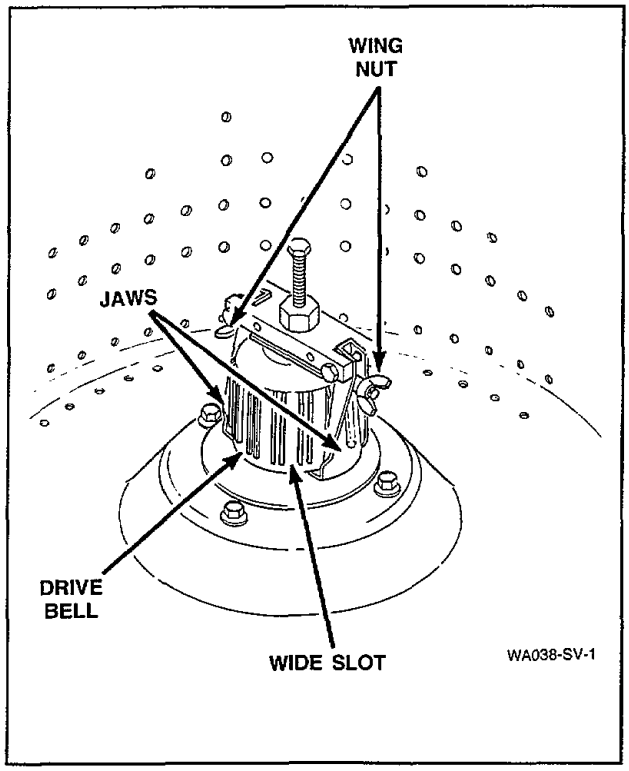


Figure 19

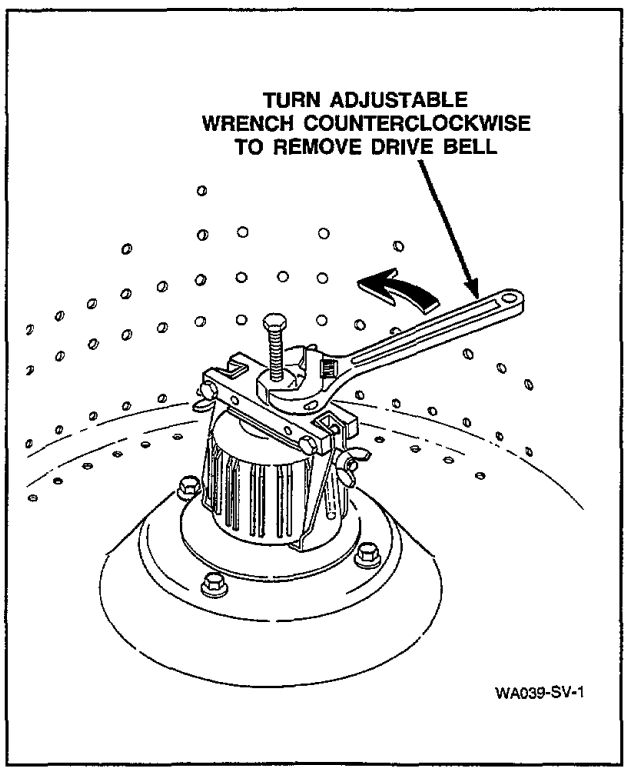


Figure 20

(continued)

j. Turn the one quarter inch bolt out of the transmission shaft, and remove tool and drive bell from the washer.
k. Loosen the two wing nuts and remove the drive bell from the tool.
l. Carefully pry the old seal out of the drive bell and clean any foreign materials from the bell.

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

m. Install the new seal into the drive bell, using the small end of the No. 255P4 Seal Tool.
n. Remove the seal head from the hub and clean any foreign material from the hub seal mounting area.
o. Place the new seal head onto the hub and carefully push the seal head into position using the large end of No. 255P4 Seal Tool.

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

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

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

TO REINSTALL DRIVE BELL

a. Position the drive bell over the transmission shaft. Rotate the drive bell until the splines in the drive bell line up with the splines on the transmission shaft.
b. Place the No. 253P4 Bell Tool over the top of the bell. Screw the bolt into the transmission shaft until it bottoms out.

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

c. Use an adjustable wrench and turn the large nut on the tool **CLOCKWISE** to force drive bell down onto the transmission shaft until bell bottoms out on shaft.
d. Turn the bolt out of the transmission shaft and remove the tool.
e. Place the new No. 30853 "O" Ring Gasket onto the new No. 30852 Screw. Thread the new No. 30852 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 gasket!**

NOTE: Torque the new No. 30852 Screw down between 45 to 55 inch pounds. Over torque will mushroom the plastic bell.

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

18. FRONT PANEL (Refer to *Figure 21)*

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

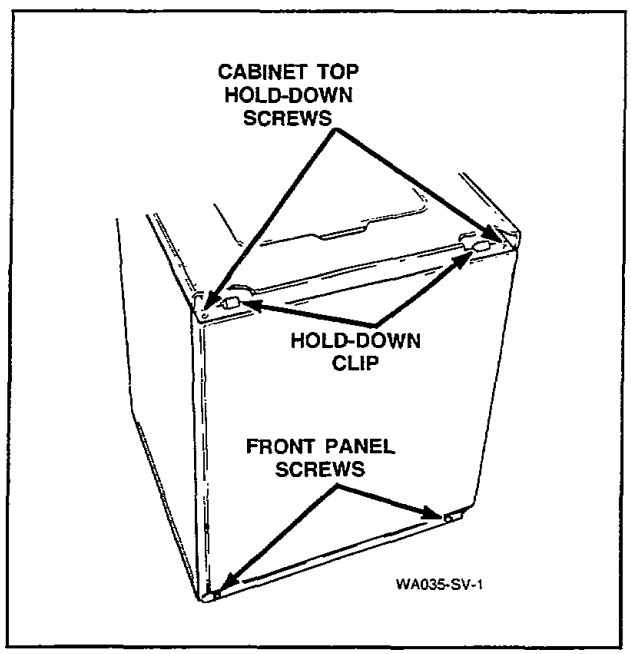


Figure 21

19. PUMP BELT

a. Remove the front panel, *paragraph 18.*
b. Remove the two front mounting screws and loosen the rear mounting screw holding the pump and the bracket to the washer base, *Figure 22.* Pivot entire assembly toward motor to loosen belt tension.
c. Run belt off motor pulley, then remove belt from pump pulley.

NOTE: After installing the pump belt, adjust belt, *paragraph 42.*

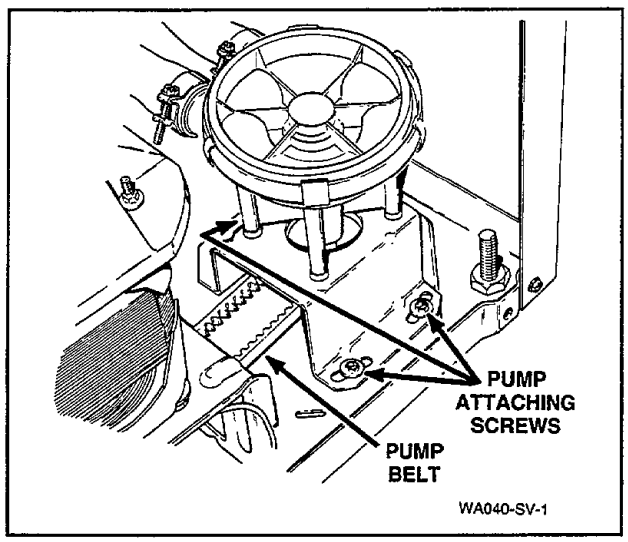


Figure 22

20. DRIVE BELT

a. Remove the front panel, *paragraph 18.*
b. Remove two front mounting screws and loosen the rear mounting screw holding pump and bracket to washer base, *Figure 22.* Pivot the entire assembly toward motor to loosen belt tension.
c. 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.

d. 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 23.*
e. Remove belt from motor pulley and pull belt out through front of motor mount.

IMPORTANT: Drive belt MUST be replaced with the appropriate belt (special clutch-type belt) for proper washer operation. Refer to the Parts Section of this manual for the correct belt number.

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.

(continued)

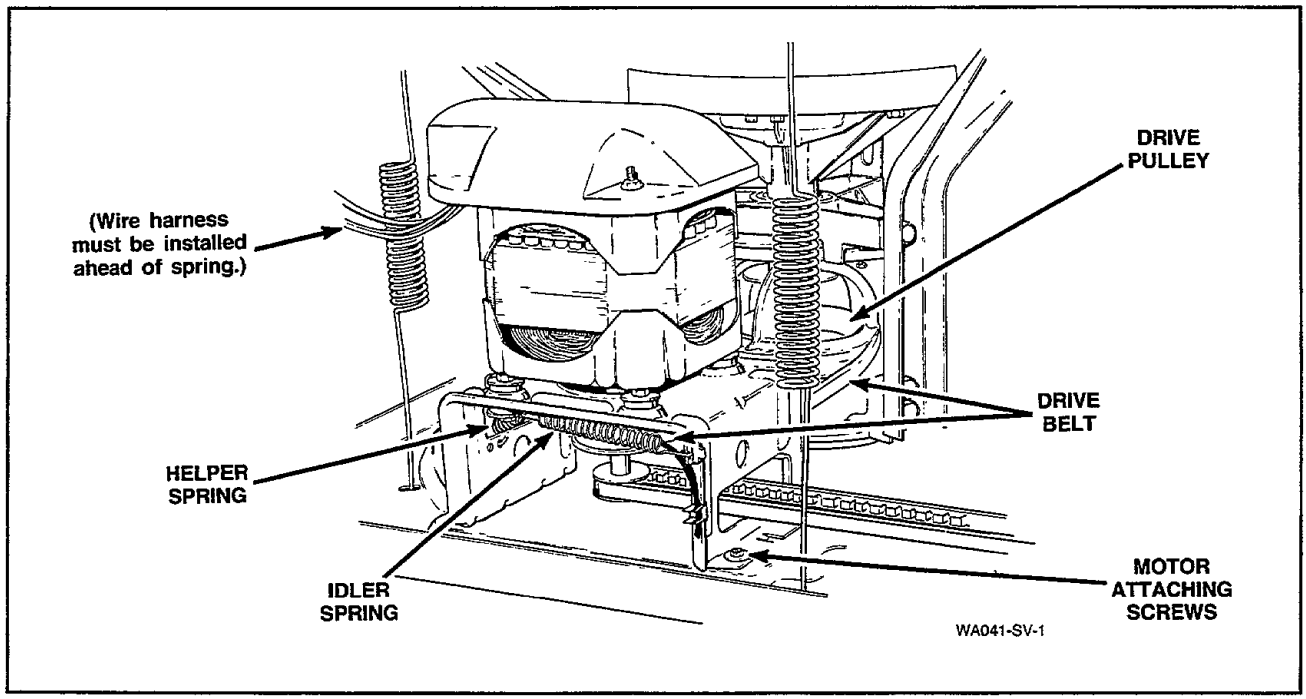


Figure 23

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. Check to be sure motor and mounting bracket have been shifted toward rear of washer to its limit of travel within the mounting bracket attaching screws. If the motor and mounting bracket must be repositioned, loosen the four motor attaching screws, *Figure 24,* and shift motor and mounting bracket toward rear of washer to its limit of travel. Retighten the four attaching screws, *Figure 24.*

e. Install pump belt, adjust belt per *paragraph 42.*

21. MOTOR AND MOUNTING BRACKET

a. Remove the front panel, *paragraph 18.*
b. Disconnect the motor wire harness from the base wire harness at the disconnect blocks, *Figure 28.*
c. Remove the pump belt, *paragraph 19,* then remove the drive belt, *paragraph 20.*

NOTE: When installing the belts, adjust the pump belt, *paragraph 42.* There is no drive belt adjustment.

d. Remove the four screws holding the motor and mounting bracket to the washer base, *Figure 24,* then lift the complete assembly out of the washer.

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

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

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

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

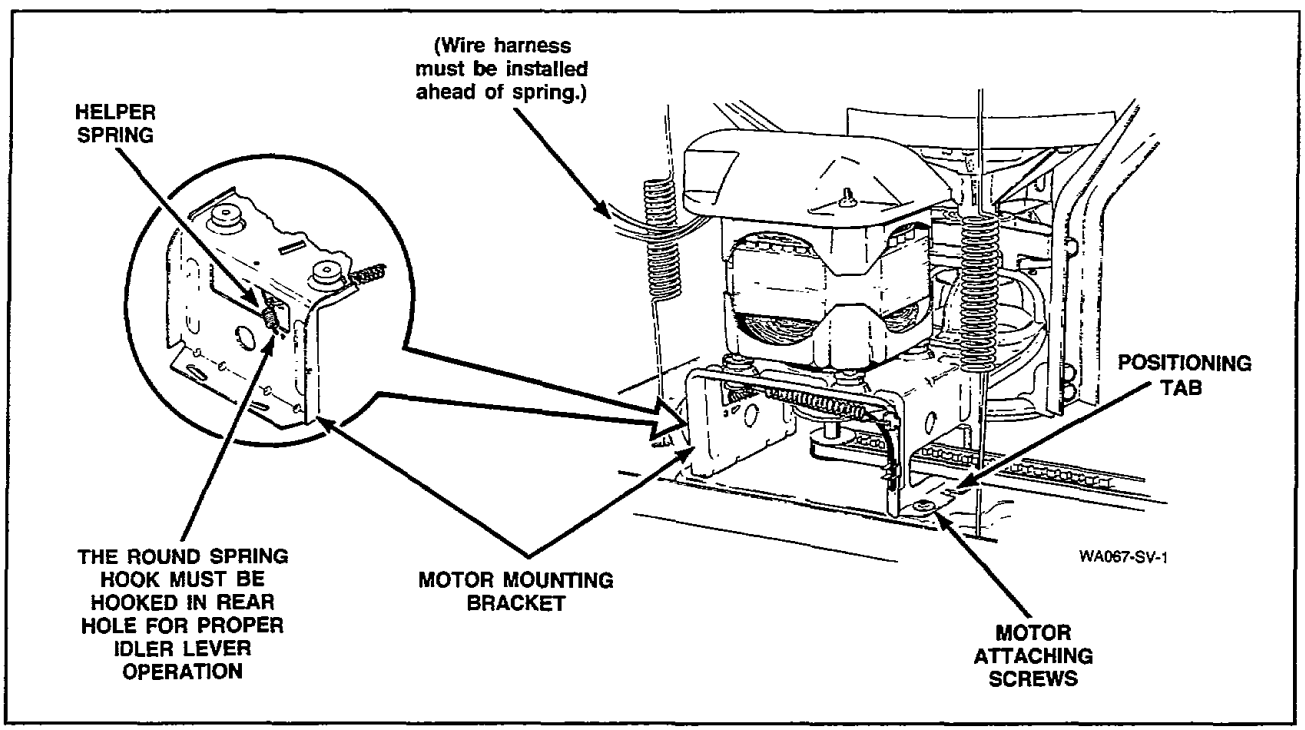


Figure 24

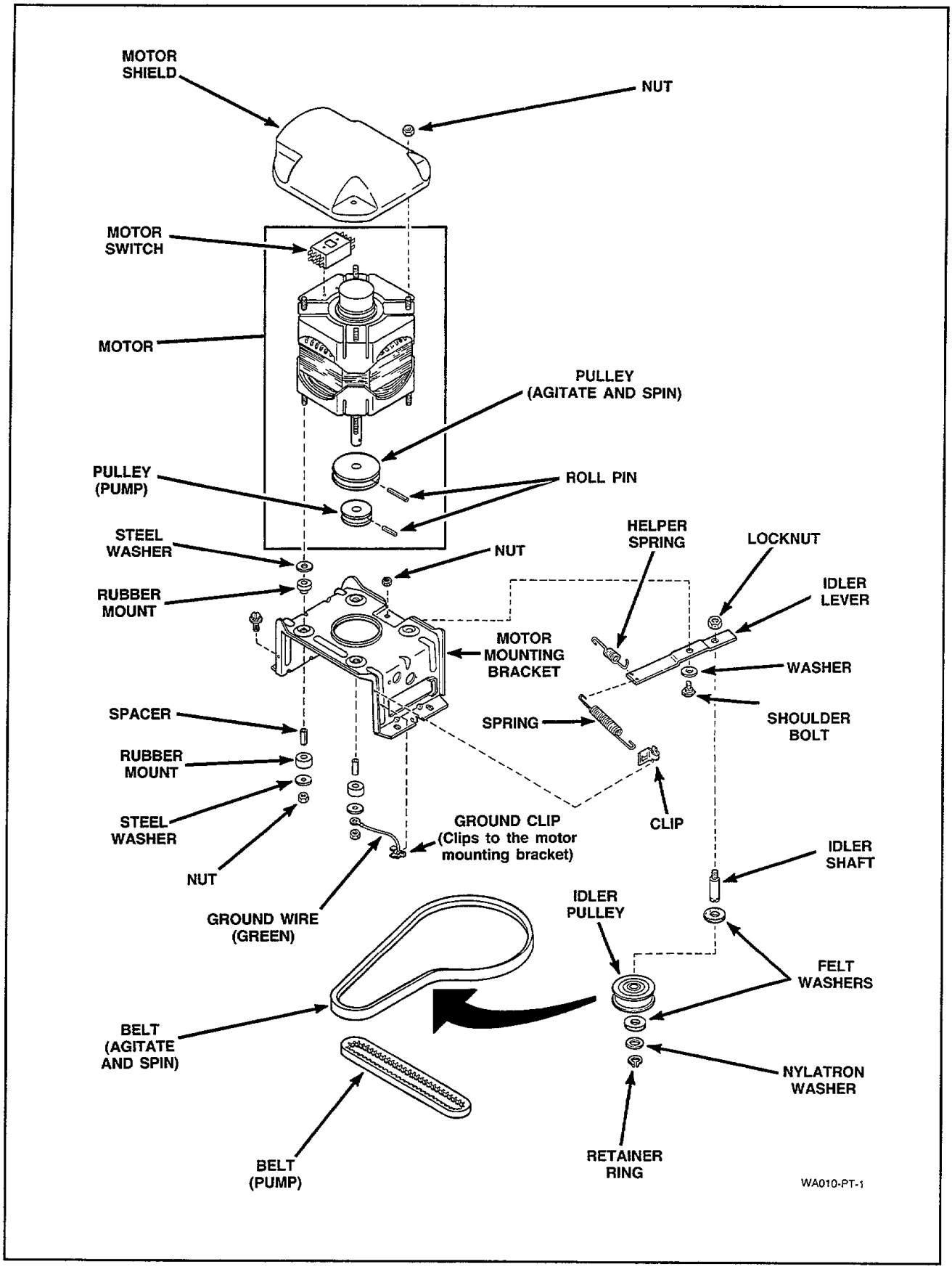

MOTOR SHIELD
NUT
MOTOR SWITCH
MOTOR
PULLEY (AGITATE AND SPIN)
PULLEY (PUMP)
ROLL PIN
STEEL WASHER
NUT
HELPER SPRING
LOCKNUT
RUBBER MOUNT
IDLER LEVER
MOTOR MOUNTING BRACKET
WASHER
SPACER
SPRING
SHOULDER BOLT
RUBBER MOUNT
STEEL WASHER
CLIP
GROUND CLIP (Clips to the motor mounting bracket)
IDLER SHAFT
NUT
GROUND WIRE (GREEN)
IDLER PULLEY
FELT WASHERS
BELT (AGITATE AND SPIN)
NYLATRON WASHER
BELT (PUMP)
RETAINER RING
WA010-PT-1

Figure 25

22. IDLER LEVER AND PULLEY

a. Remove the motor and mounting bracket, *paragraph 21,* steps "a" through "d".
b. Remove the nut, washer and bolt holding the idler lever and pulley to the motor mounting bracket.

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

c. Apply No. 21814 Lubricant to the area of the idler lever that makes contact with the motor mounting bracket.

23. MOTOR DRIVE PULLEY OR PUMP PULLEY

a. Remove the motor and mounting bracket, *paragraph 21,* steps "a" through "d".
b. Lay the motor and mounting bracket on its side.

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

24. MOTOR SWITCH

a. Remove the front panel, *paragraph 18.*
b. Remove the nut holding the motor shield to the motor, *Figure 25.*
c. Disconnect external wires from the motor switch terminals.

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

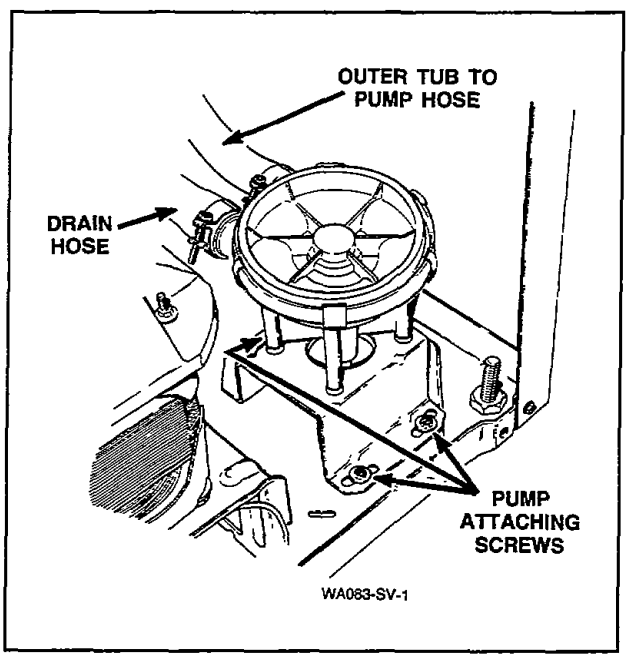


Figure 26

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

NOTE: Refer to the Wiring Schematics, Page 120 or 121, for rewiring the internal switch wires.

25. PUMP ASSEMBLY

a. Remove the front panel, *paragraph 18.*
b. Remove the pump belt, *paragraph 19.*

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

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

d. Slide pump and mounting bracket toward rear of washer and lift assembly out of washer.
e. Loosen the hose clamps and remove hoses from pump assembly, *Figure 26.*

Pump Mounting Bracket

Remove the four screws holding the pump to the mounting bracket.

NOTE: Refer to *Figure 27* for the pump and mounting bracket assembly sequence.

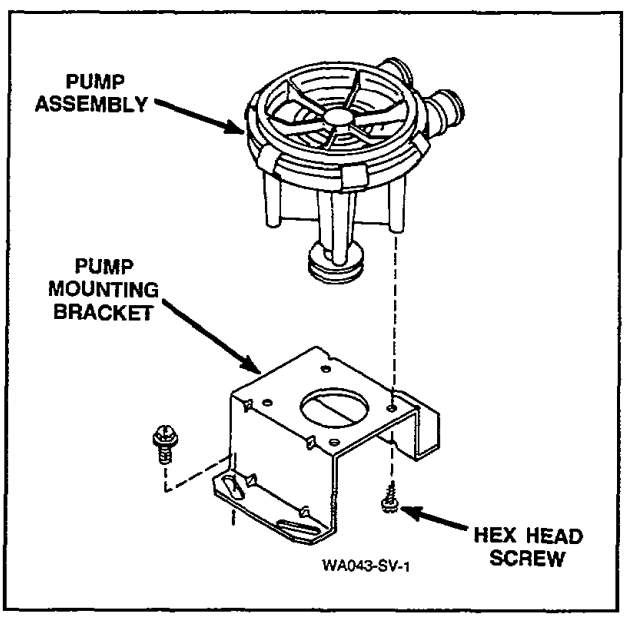


Figure 27

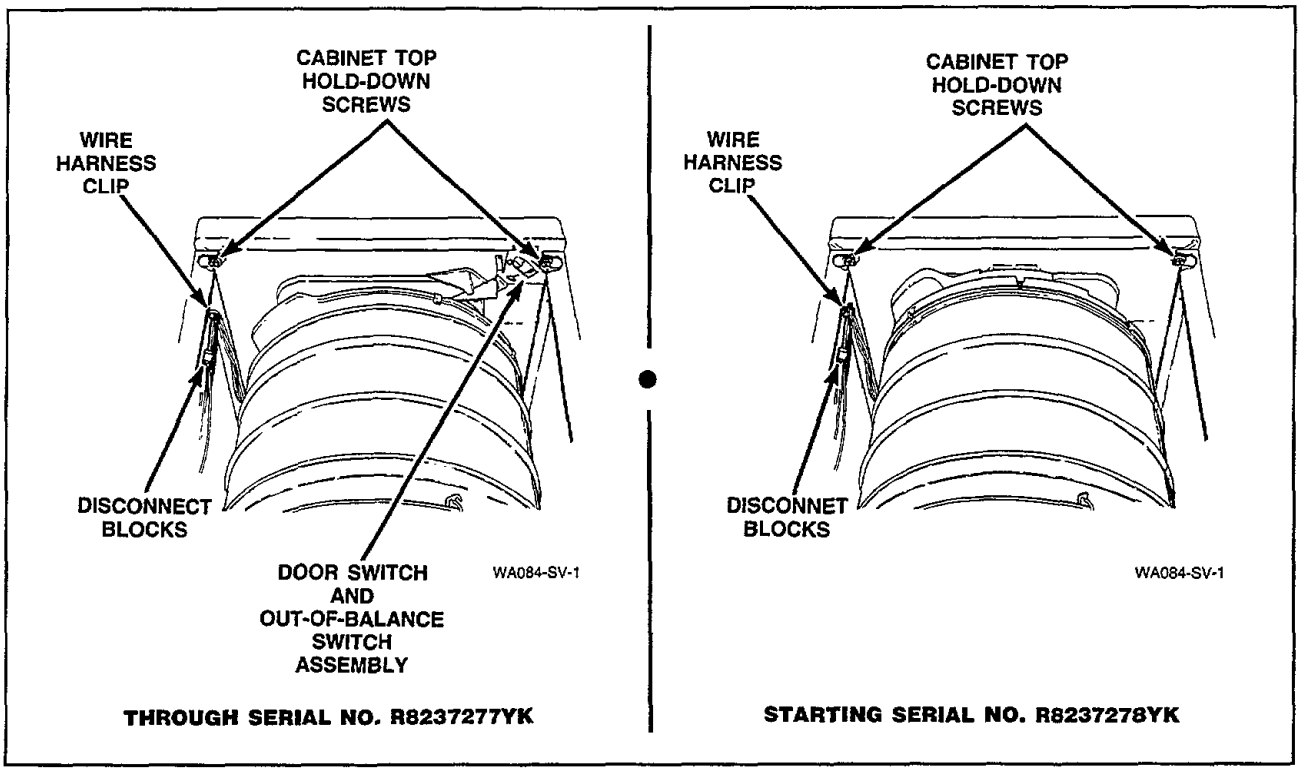


Figure 28

26. CABINET TOP ASSEMBLY

a. Remove two screws from bottom edge of front panel, *Figure 21.*
b. Pull botom of panel away from washer until hold-down clips (located on top flange of panel disengage from slots in cabinet top, *Figure 28.*
c. Remove the two cabinet top hold-down screws, *Figure 28.*
d. Metered Models — Unlock and open the meter case service door. Remove the inner cap screw holding the timer and bracket to the cabinet bracket.
e. Slide the timer and bracket to the left to disengage the bracket from the shoulder screw. Lift the timer and bracket out of meter case through the service door opening as far as the wires will permit.
f. Remove the shoulder screw from inside the meter case.

NOTE: When installing the shoulder screw, it must be installed in the outer hole, *Figure 7,* to enable the timer bracket to slide under the screw head.

g. If the area or space permits, tape the loading door closed and lift the cabinet top to a vertical position by hinging it on the rear hold-down bracket.

NOTE: Cabinet top is self supporting, however, a small chain may be used for additional support, *Figure 29.*

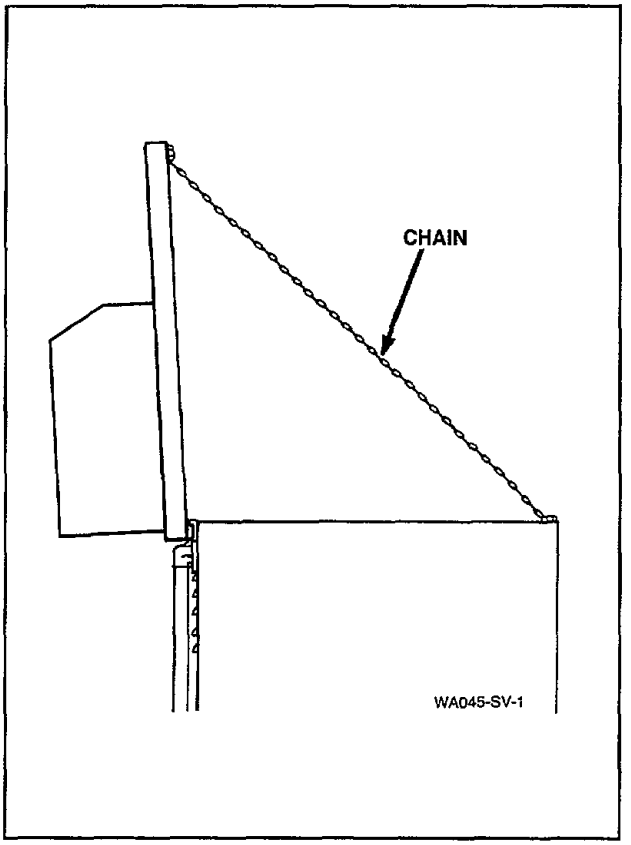


Figure 29

(continued on Page 55)

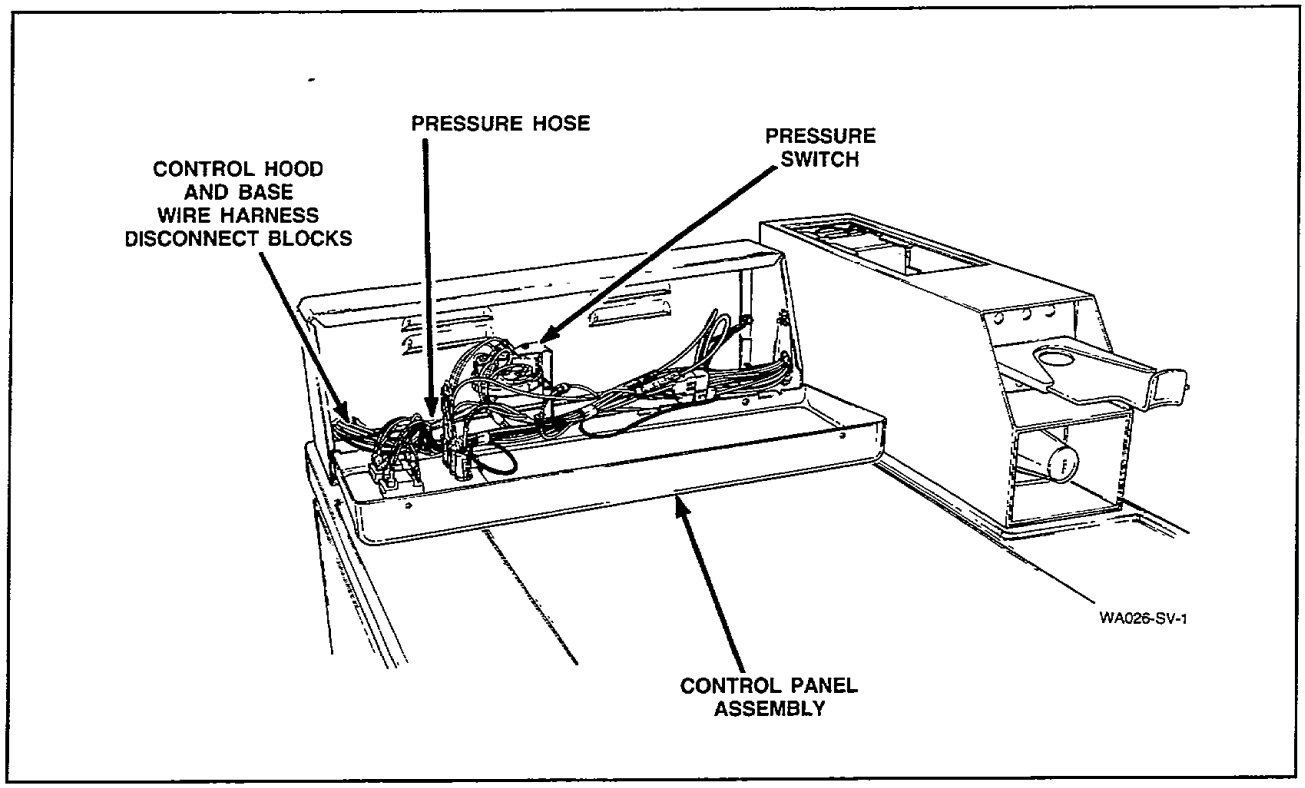


Figure 30

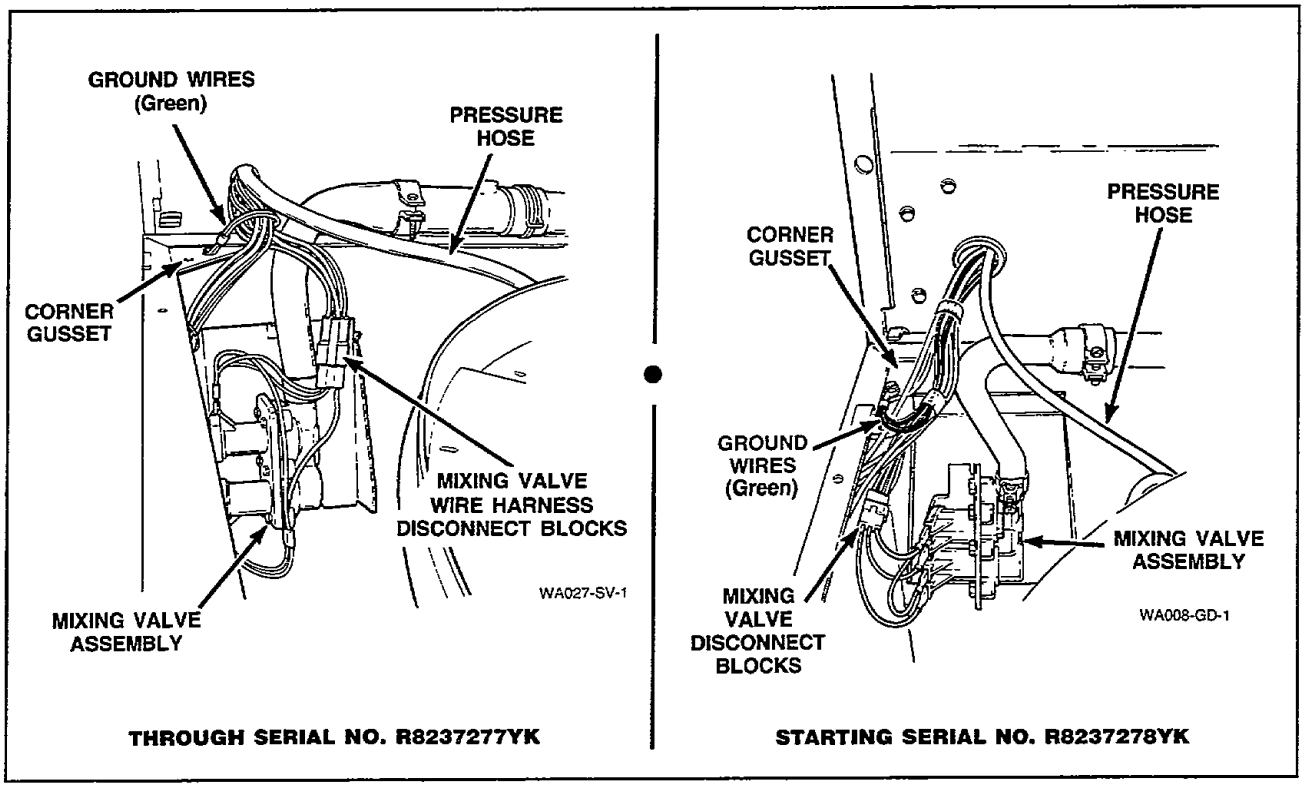


Figure 31

TO REMOVE THE CABINET TOP FROM THE WASHER

a. **Metered Models** — Unlock and remove the service door. Remove the inner cap screw holding the timer and bracket to the cabinet bracket.
b. Slide the timer and bracket to the left to disengage the bracket from the shoulder screw. Lift timer and bracket out of the meter case through the service door opening as far as the wires will permit.
c. Remove the shoulder screw from inside the meter case.

NOTE: When reinstalling the shoulder screw, it must be installed in the outer hole, *Figure 7,* to enable the timer bracket to slide under the screw head.

d. Remove the two screws from bottom edge of front panel, *Figure 21.*
e. Pull bottom of panel away from washer until the hold-down clips (located on the top flange of this panel) disengage from the slots in the cabinet top.
f. Remove the two cabinet top hold-down screws, *Figure 28.*
g. Remove two control panel attaching screws, *Figure 5*
h. Lift control panel up and out of the slots in the cabinet top. Lay the control panel face down on some protective padding on the cabinet top.
i. Disconnect control hood harness from base wire harness at the quick disconnect blocks, *Figure 30.*
j. Disconnect pressure hoses from the pressure switch.

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

k. Push the base wire harness block and the pressure hose down through the hole in the cabinet top.
l. Tape the loading door closed.
m. Lift front of cabinet top slightly and pull forward to disengage from the rear hold-down bracket.

⚠WARNING

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

n. Pull the top forward far enough to permit disconnecting the green ground wires from the top rear corner gusset of the washer cabinet., *Figure 31,* disconnect wires from mixing valve solenoids at rear of washer.

⚠WARNING

Whenever ground wires are removed during servicing, those ground wires must be reconnected to insure that the washer is properly grounded, and to reduce the risk of fire, electric shock, or personal injury.

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

o. Carefully lift cabinet top off washer and set alongside the washer cabinet on protective padding.
p. **Starting Serial No. R8237278YK**

⚠WARNING

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

IMPORTANT: 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.

27. DOOR AND OUT-OF-BALANCE SWITCH ASSEMBLY

a. Hinge the cabinet top or remove, *paragraph 26.*

b. **Through Serial No. R8237277YK —** Remove the two screws holding switch and bracket assembly to the underside of the right front flange of the cabinet top, *Figure 32.*
Starting Serial No. R8237278YK — Remove screw holding switch assembly to underside of cabinet top, *Figure 32.*

c. Disconnect wires from switch.

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

d. **Through Serial No. R8237277YK —** Remove two screws holding switch to bracket, *Figure 32.*
Starting Serial No. R8237278YK — Remove clip holding switch in holder, *Figure 32.*

NOTE: After installing switch assembly, adjust per *paragraph 43.*

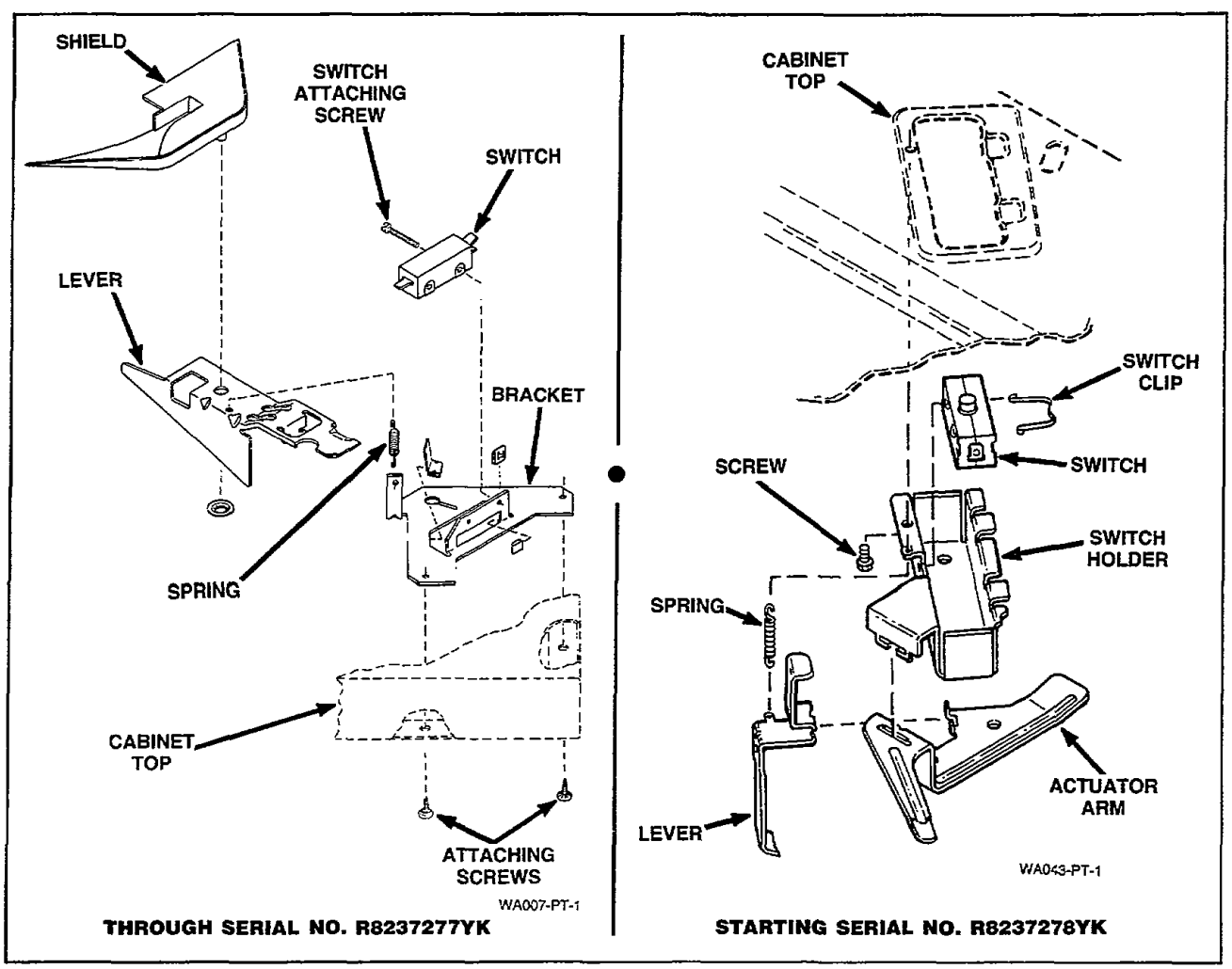


Figure 32

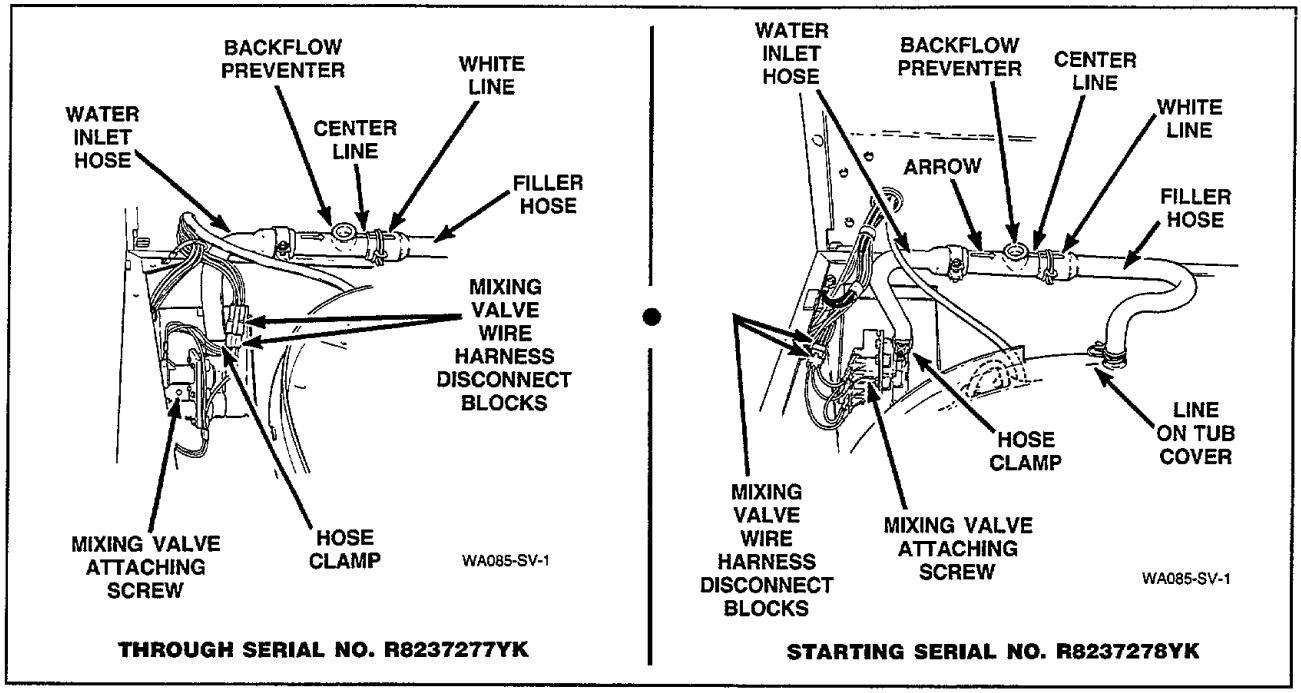


Figure 33

28. MIXING VALVE ASSEMBLY

a. Hinge cabinet top or remove, *paragraph 26.*
b. Remove screw holding mixing valve to mounting bracket at rear of washer cabinet, *Figure 33.*

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

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

NOTE: Refer to appropriate wiring diagram when rewiring solenoid.

29. WASHTUB AND LINT FILTER OR CLOTHES GUARD

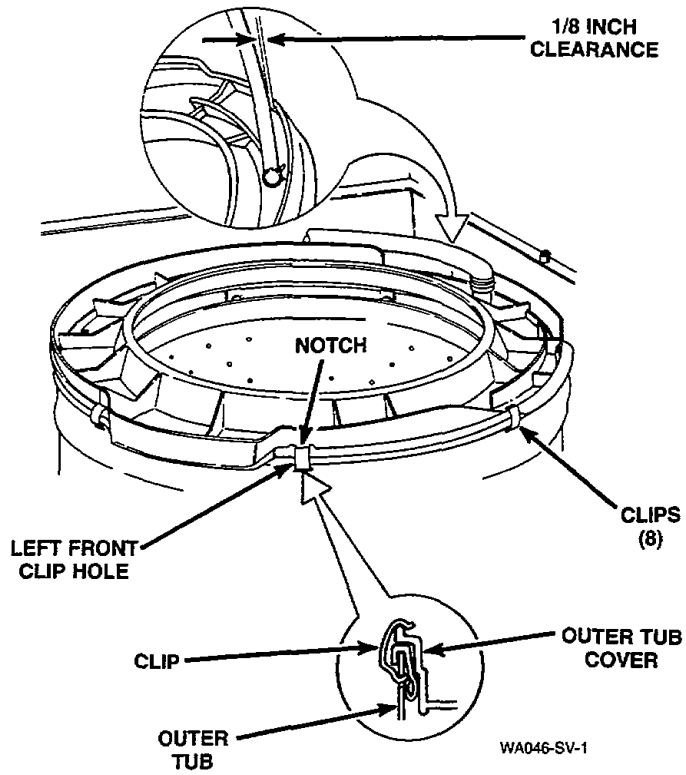
a. Remove agitator, *paragraph 16.*
b. Hinge cabinet top or remove, *paragraph 26.*
c. Disconnect filler hose from backflow preventer, *Figure 33.*

NOTE: Through Serial No. R8237277YK — When installing filler hose, white line on the hose must be aligned with center line of the backflow preventer, *Figure 33.* A one eighth inch clearance is necessary to prevent the hose from rubbing on the flange of the tub cover, *Figure 34.* Loosen the hose clamp and move the hose to obtain the proper clearance.

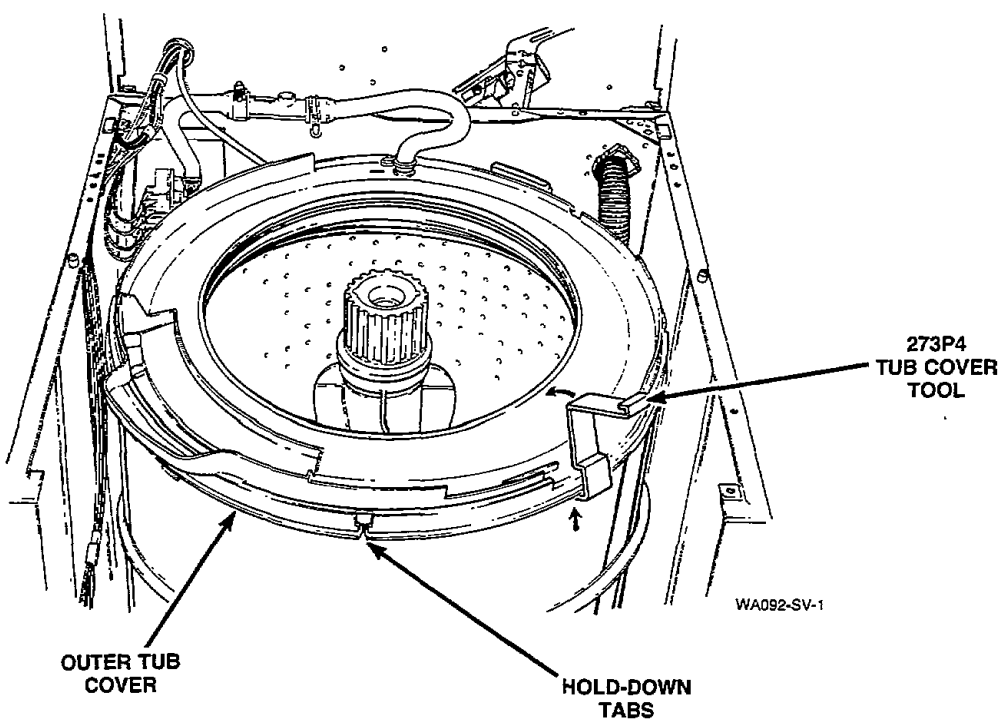
Starting Serial No. R8237278YK — When installing filler hose, white dot on the hose must be aligned with arrow on backflow preventer, *Figure 33,* and white line on hose that connects to tub cover must be aligned with line located on top side of outer tub cover, *Figure 33.* Make sure the hose is in its natural position (not kinked or twisted) and is parallel to the rear edge of the washer cabinet. If it is not, loosen hose clamp and straighten the hose.

d. **Starting Serial No. R8237278YK —** Unhook the pressure hose from the retainer clips located on the left rear edge of the outer tub cover, *Figure 33.*

e. **Through Serial No. R8237277YK —** Remove eight clips holding outer tub cover to tub, *Figure 34,* lift cover off tub and set beside washer cabinet.
Starting Serial No. R8237278YK — 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 34.* 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.



THROUGH SERIAL NO. R8237277YK



STARTING SERIAL NO. R8237278YK

Figure 34

NOTE: **Through Serial No. R8237277YK** — When installing the outer tub cover, always use a new cover gasket. Lubricate the gasket with liquid soap to aid in the assembly. Cover must be placed on the outer tub so the notch on the top edge of the outer tub cover is directly over the left front clip hole in the tub, *Figure 34.* Starting with this hole, place each spring clip in its respective hole and snap in place. See *Figure 34* for proper clip installation.

Starting Serial No. R8237278YK — 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 drain tabs, lay gasket into the gasket groove of the tub cover, *Figure 35.* Using the semi-curled end of the tub cover tool, Part No. 273P4, *Figure 35,* 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.

With the tub cover tilted at approximately a 45 degree angle, *Figure 36,* insert the positioning pin on the tub cover into the notch on the outer tub flange. The two bleach drain 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 insure 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 insure 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.

(continued on page 61)

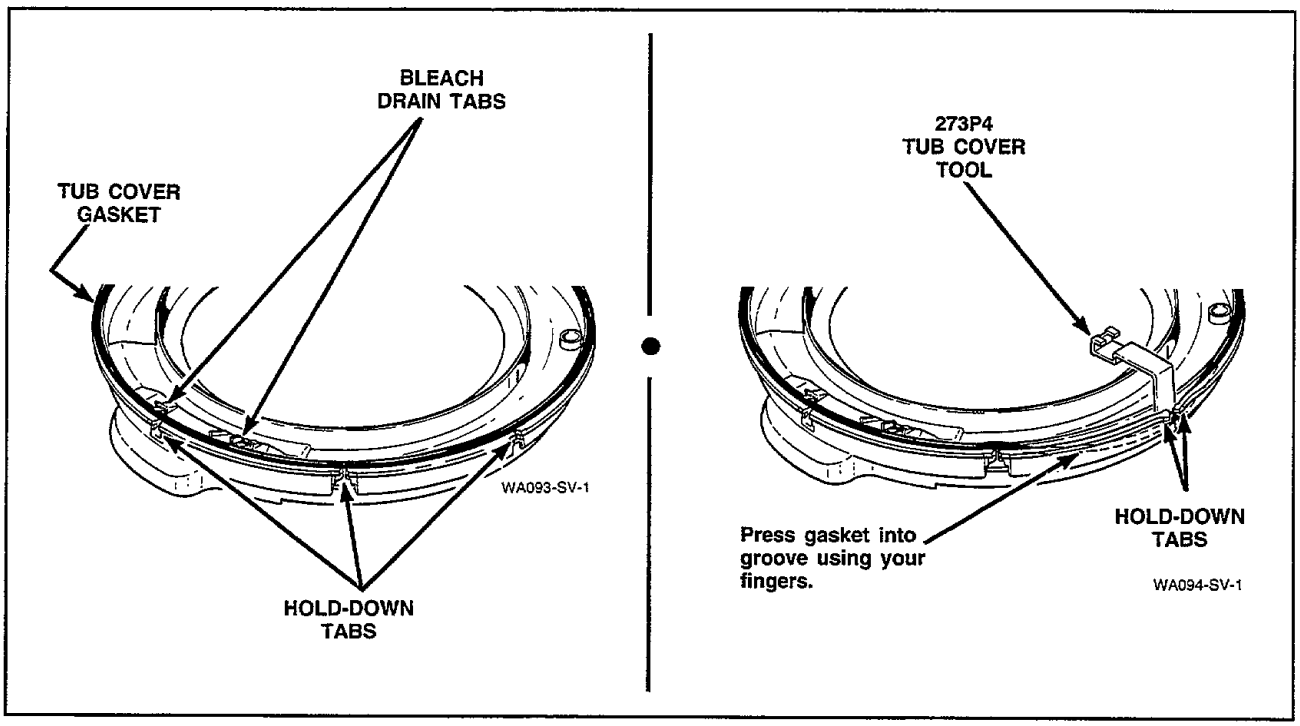


Figure 35

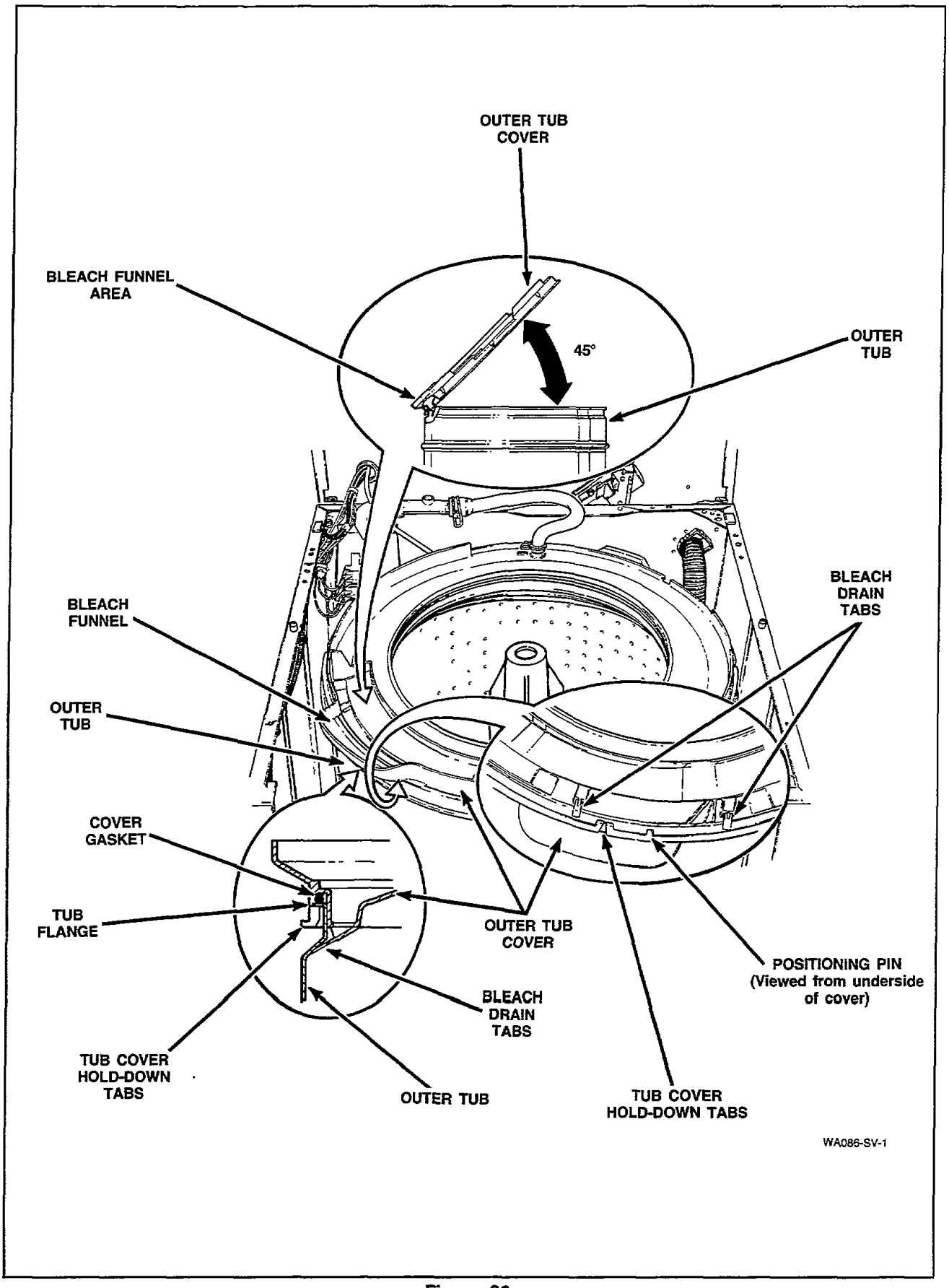

OUTER TUB COVER
BLEACH FUNNEL AREA
45°
OUTER TUB
BLEACH FUNNEL
OUTER TUB
BLEACH DRAIN TABS
COVER GASKET
TUB FLANGE
OUTER TUB COVER
POSITIONING PIN (Viewed from underside of cover)
BLEACH DRAIN TABS
TUB COVER HOLD-DOWN TABS
OUTER TUB
TUB COVER HOLD-DOWN TABS
WA086-SV-1

Figure 36

f. Remove the four screws and washers holding the washtub to the hub, *Figure 37.*

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

g. Lift the washtub and lint filter or clothes guard out of the outer tub.

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

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

TO REMOVE LINT FILTER OR CLOTHES GUARD FROM WASHTUB

a. Place a small screwdriver in behind the slots provided in the filter or guard, *Figure 37.*
b. Carefully pry the pins of the filter or guard out of the holes in the washtub, *Figure 37.*

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

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

TO INSTALL LINT FILTER OR CLOTHES GUARD IN WASHTUB

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

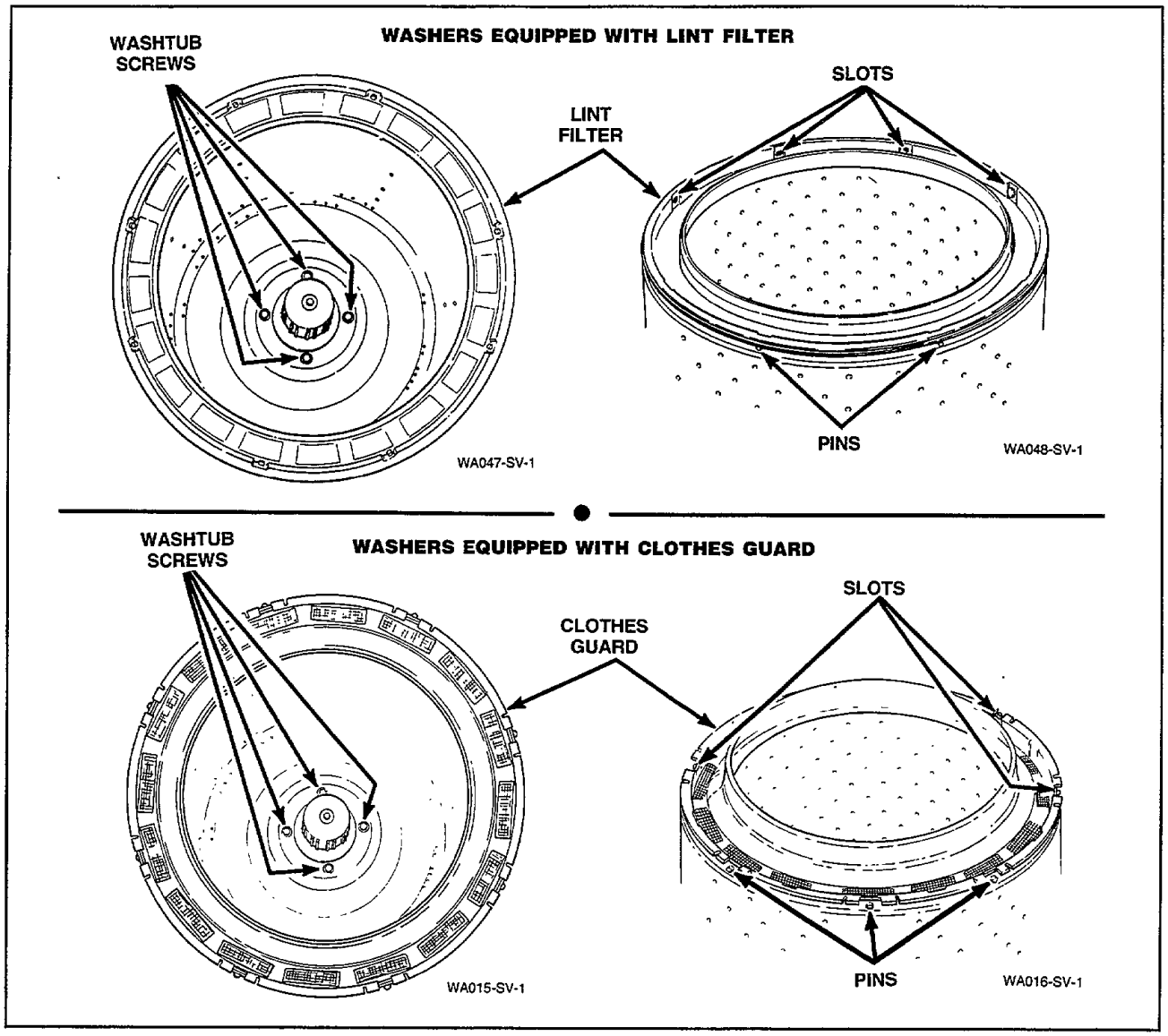


Figure 37

30. HUB AND SEAL KIT ASSEMBLY

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

a. Remove the two screws from the bottom edge of the front panel, *Figure 21.*
b. Pull the bottom of the panel away from the washer until the hold-down clips (located on the top flange of the panel) disengage from the slots in the cabinet top, *Figure 21.*
c. Hinge or remove cabinet top, *paragraph 26.*
d. Remove the agitator, *paragraph 16.*
e. **Starting Serial No. R8237278YK —** Unhook the pressure hose from the retainer clips located on the left rear edge of the outer tub cover, *Figure 33.*
f. Disconnect filler hose from backflow preventer, *Figure 33.*

NOTE: **Through Serial No. R8237277YK — When reinstalling filler hose, white line on hose must be aligned with center line of backflow preventer, *Figure 33.* A one eighth inch clearance is necessary to prevent the hose from rubbing on the flange of the tub cover, *Figure 34.* Loosen hose clamp and move hose to obtain the proper clearance.**

Starting Serial No. R8237277YK — When reinstalling filler hose, white dot on hose must be aligned with arrow on backflow preventer, *Figure 33,* and white line on hose that connects to outer tub cover must be aligned with line located on top side of tub cover, *Figure 33.* Make sure the hose is in its natural position (not kinked or twisted). If it is not, loosen hose clamp and straighten the hose.

g. **Through Serial No. R8237277YK —** Remove eight clips holding cover to outer tub, *Figure 34.*
Starting Serial No. R8237278YK — 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 34.* 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.
h. Lift the cover off the outer tub and set beside the washer cabinet.
i. **Through Serial No. R8237277YK —** Remove old cover gasket from top of outer tub.

NOTE: **Through Serial No. R8237277YK — When installing the outer tub cover, always use a new cover gasket. Lubricate the gasket with liquid soap to aid in the assembly. Cover must be placed on the outer tub so the notch on the top edge of the outer tub cover is directly over the left front clip hole in the tub, *Figure 34,*. Starting with this hole, place each spring clip in its respective hole and snap in place. See *Figure 34* for proper clip installation.**

Starting Serial No. R8237278YK — 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 drain tabs, lay gasket into the gasket groove of the tub cover, *Figure 35.* Using the semi-curled end of the tub cover tool, Part No. 273P4, *Figure 35,* 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.

With the tub cover tilted at approximately a 45 degree angle, *Figure 36,* insert the positioning pin on the tub cover into the notch on the outer tub flange. The two bleach drain 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 insure 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 insure 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.

j. Remove the four screws holding the washtub to the hub, *Figure 37,*

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

k. Lift the washtub and lint filter or clothes guard out of the outer tub.

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

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

TO REMOVE AGITATOR DRIVE BELL

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

NOTE: To remove the drive bell from the transmission shaft will require using the No. 253P4 Drive Bell Tool, *Figure 18.*

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 19.*
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 19.*
f. Use an adjustable wrench and turn the large nut on the tool **COUNTERCLOCKWISE** to pull the drive bell from the transmission shaft, *Figure 20.*

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

g. Turn the one 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. Carefully pry the old seal out of the drive bell and clean any foreign materials from the bell.

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

j. Install the new seal into the drive bell, using the small end of the No. 255P4 Seal Tool.
k. Remove the seal head from the hub and clean any foreign material from the hub seal mounting area.
l. Place the new seal head on hub and carefully push the seal head into position using the large end of No. 255P4 Seal Tool.

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

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

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

m. Remove the large hex nut using a No. 237P4 Hex Wrench, *Figure 38.*
k. Remove the spline insert from the transmission tube, *Figure 38.*

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

o. Remove the hub from the splines on the transmission tube.

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

p. Remove the old water seal from the outer tub.

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

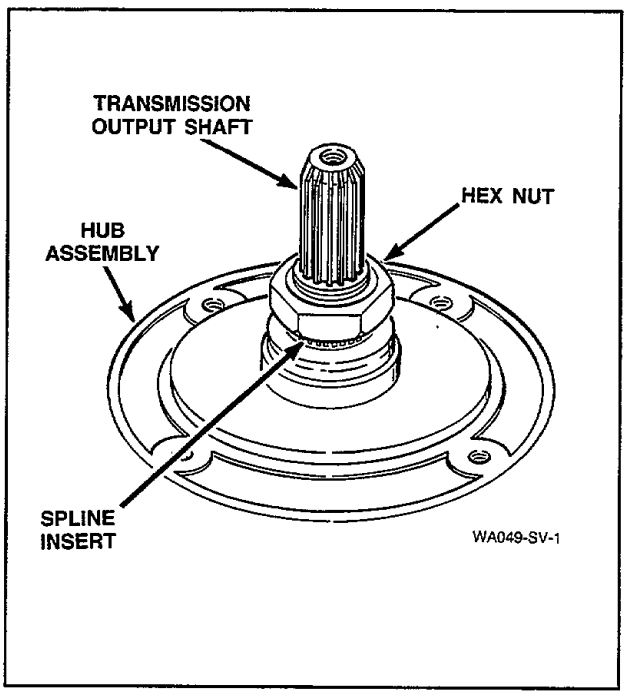


Figure 38

TO INSTALL THE NO. 495P3 HUB AND SEAL KIT

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

a. Apply a small amount of 27615P Sealant, (supplied in kit) around the outer surface of the tub flange, *Figure 39.*

IMPORTANT: DO NOT allow sealant to contact the flinger, *Figure 38,* because this could prevent the flinger from keeping moisture out of upper bearing.

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 40*

IMPORTANT: Do not over lubricate!

c. Insert stainless steel sleeve into water seal from bottom side of seal, *Figure 40,* 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 40.)*

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.

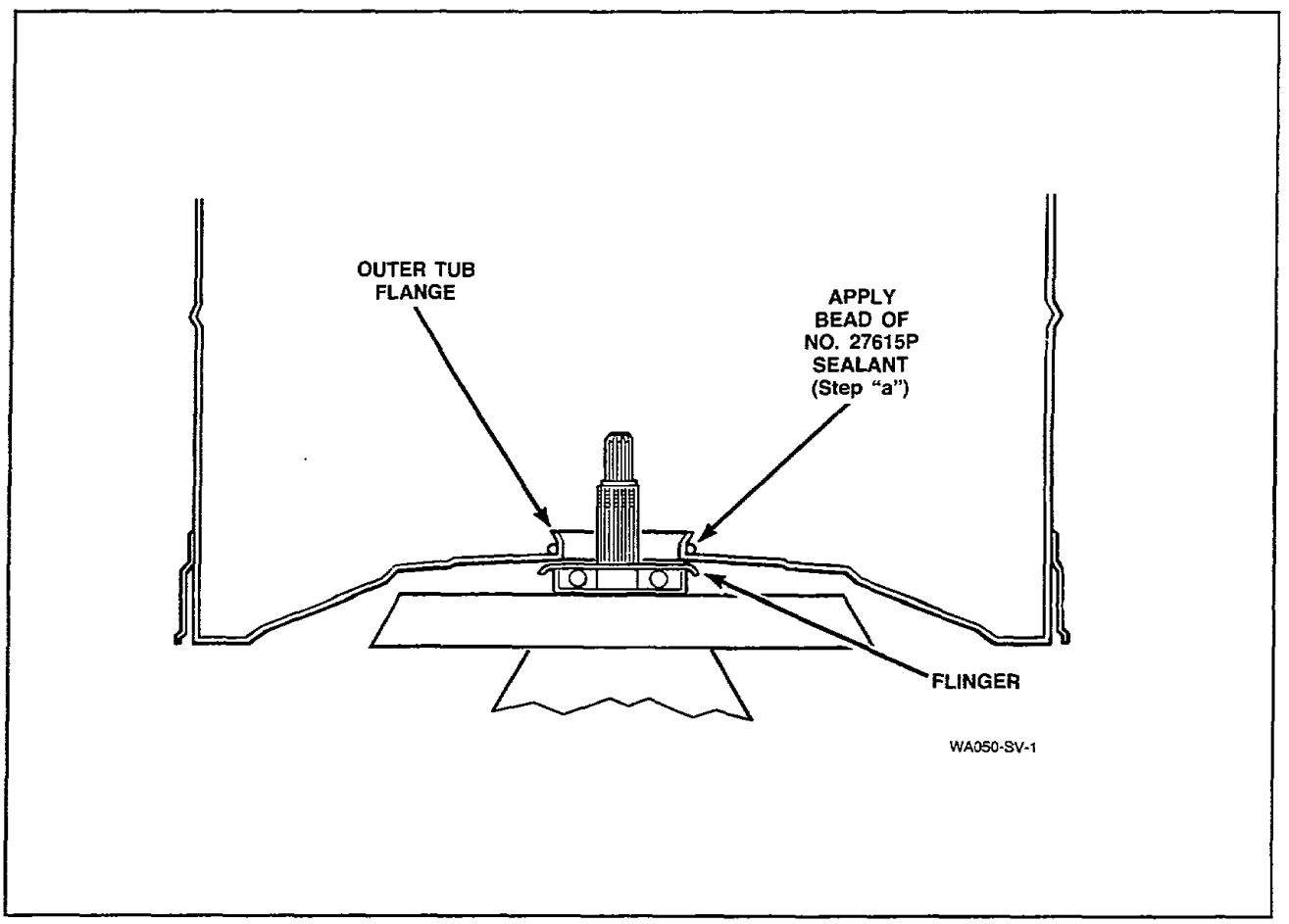


Figure 39

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 the 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.

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

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

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

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

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

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

m. **Through Serial No. R8237277YK —** Carefully place new outer tub cover gasket (supplied in kit) around the top rim of outer tub.

NOTE: Through Serial No. R8237277YK — When installing the outer tub cover, lubricate the cover gasket with liquid soap to aid assembly. Cover must be placed on the outer tub so the notch on the top edge of the outer tub cover is directly over the left front clip hole in the tub, *Figure 34.* Starting with this hole, place each spring clip in its respective hole and snap it into place, refer to *Figure 34* for proper clip installation.

Starting Serial No. R8237278YK — 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 drain tabs, lay gasket into the gasket groove of the tub cover, *Figure 35.* Using the semi-curled end of the tub cover tool, Part No. 273P4, *Figure 35,* 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.

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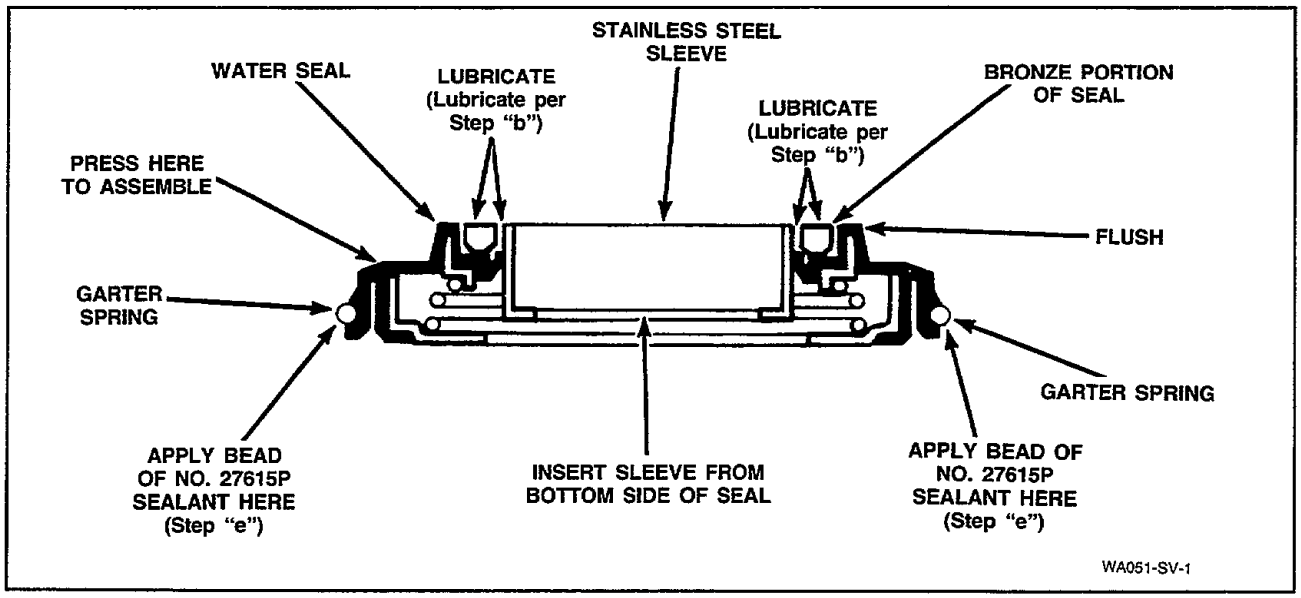

Figure 40

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.

With the tub cover tilted at approximately a 45 degree angle, *Figure 36*, insert the positioning pin on the tub cover into the notch on the outer tub flange. The two bleach drain 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 insure 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 insure 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.

n. Reinstall the filler hose on the backflow preventer.

NOTE: Through Serial No. R8237277YK — When reinstalling the filler hose, the white line on the hose must be aligned with the center line of the backflow preventer, *Figure 33.* A one eighth inch clearance is necessary to prevent the hose from rubbing on the flange of the tub cover, *Figure 34.* Loosen hose clamp and move hose to obtain the proper clearance.

Starting Serial No. R8237278YK — When reinstalling filler hose, white dot on hose must be aligned with the arrow on backflow preventer, *Figure 33*; and white line on hose that connects to tub cover must be aligned with line located on top side of outer tub cover, *Figure 33.* Make sure the hose is in its natural position (not kinked or twisted) and is parallel with the rear edge of the washer cabinet. If it is not, loosen hose clamp and straighten the hose.

TO INSTALL DRIVE BELL AND NO. 442P3 SEAL KIT

a. Place new seal head (supplied in kit) onto hub. Then carefully push seal head into position using large end of No. 255P4 Seal Tool. Make sure seal is pressed down against shoulder on hub.

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

b. Install new seal seat (supplied in kit) into drive bell using small end of No. 255P4 Seal Tool.
c. Position drive bell over transmission shaft. Rotate drive bell until splines on drive bell line up with splines on transmission shaft.
d. Place No. 253P4 Bell Tool over top of bell. Screw bolt into transmission shaft until it bottoms out.

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

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

NOTE: Torque new screw down between 45 to 55 inch pounds. Over torque will mushroom the plastic bell.

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

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

IMPORTANT: Step "l" is necessary to allow petroleum jelly, applied to water seal, a chance to run in on seal surfaces before water is added to washer.

31. OUTER TUB

a. Remove the agitator, *paragraph 16.*
b. Remove the front panel, *paragraph 18.*
c. Remove the two cabinet top hold-down screws and hinge the cabinet top or remove, *paragraph 26.*
d. Loosen the hose clamp and disconnect the filler hose from the backflow preventer, *Figure 33.*

NOTE: Through Serial No. R8237277YK — When reinstalling the filler hose, the white line on the hose must be aligned with the center line of the backflow preventer, *Figure 33.* A one eighth inch clearance is necessary to prevent the hose from rubbing on the flange of the tub cover, *Figure 34.* Loosen hose clamp and move hose to obtain the proper clearance.

Starting Serial No. R8237278YK —When reinstalling the filler hose, the white dot on hose must be aligned with the arrow on the backflow preventer, *Figure 33;* and white line on hose that connects to tub cover must be aligned with line located on top side of outer tub cover, *Figure 33.* Make sure the hose is in its natural position (not kinked or twisted) and is parallel with the rear edge of the washer cabinet. If it is not, loosen hose clamp and straighten the hose.

e. **Through Serial No. R8237277YK —** Remove the eight clips holding cover to outer tub, *Figure 34.*
Starting Serial No. R8237278YK — 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 34.* 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.

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

NOTE: Through Serial No. R8237277YK — When installing the outer tub cover, always use a new cover gasket. Lubricate the gasket with liquid soap to aid in assembly. Cover must be placed on outer tub so the notch on the top edge of the outer tub cover is directly over the left front clip hole in tub, *Figure 34.* Starting with this hole, place each spring clip in its respective hole and snap in place. See *Figure 34* for proper clip installation.

Starting Serial No. R8237278YK — 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 drain tabs, lay gasket into the gasket groove of the tub cover, *Figure 35.* Using the semi-curled end of the tub cover tool, Part No. 273P4, *Figure 35,* 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.

With the tub cover tilted at approximately a 45 degree angle, *Figure 36,* insert the positioning pin on the tub cover into the notch on the outer tub flange. The two bleach drain 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 insure 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 insure 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.

g. Remove four screws and washers holding washtub to hub, *Figure 37.*

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

h. Lift washtub (with lint filter or clothes guard attached) out of outer tub.

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

i. Remove agitator drive bell, *paragraph 17.*
j. Remove the large hex nut using a No. 237P4 Hex Wrench. Then remove spline insert from transmission tube.

⚠WARNING

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

k. Remove hub from splines on transmission tube.

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

l. 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 30.***

m. 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.

n. 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.

o. Using No. 229P4 Spring Hook Tool, unhook five centering springs from lower edge of outer tub, *Figure 41.*

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

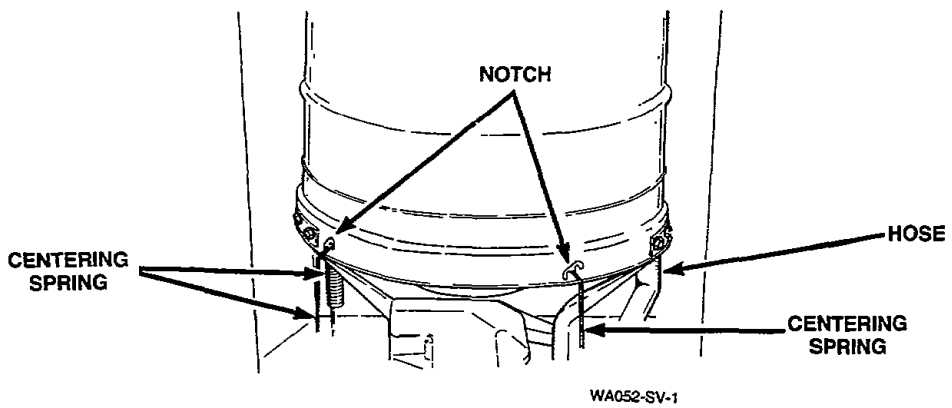

Figure 41

p. Disconnect hose between outer tub and pump assembly.
q. Remove the hose clamp holding the pressure hose to the pressure accumulator. Then remove the tape holding the pressure hose to the outer tub.
r. Grasp outer tub and lift complete tub assembly (with transmission, balance ring and pivot dome attached) straight up and out of washer cabinet.
s. Turn outer tub upside-down and set on protective padding.
t. Remove screws and lockwashers holding each support leg to outer tub, *Figure 42.* Then lift transmission, balance ring and pivot dome off tub.

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

u. Turn outer tub upright and remove pressure accumulator 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 accumulator with liquid soap to aid when assembling accumulator into grommet.

32. DRIVE PULLEY AND HELIX

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

NOTE: After installing belt, adjust belt, *paragraph 42.*

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

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

f. While holding idler lever, reach in and around right side of motor and run belt off right side of large drive pulley, *Figure 23.*

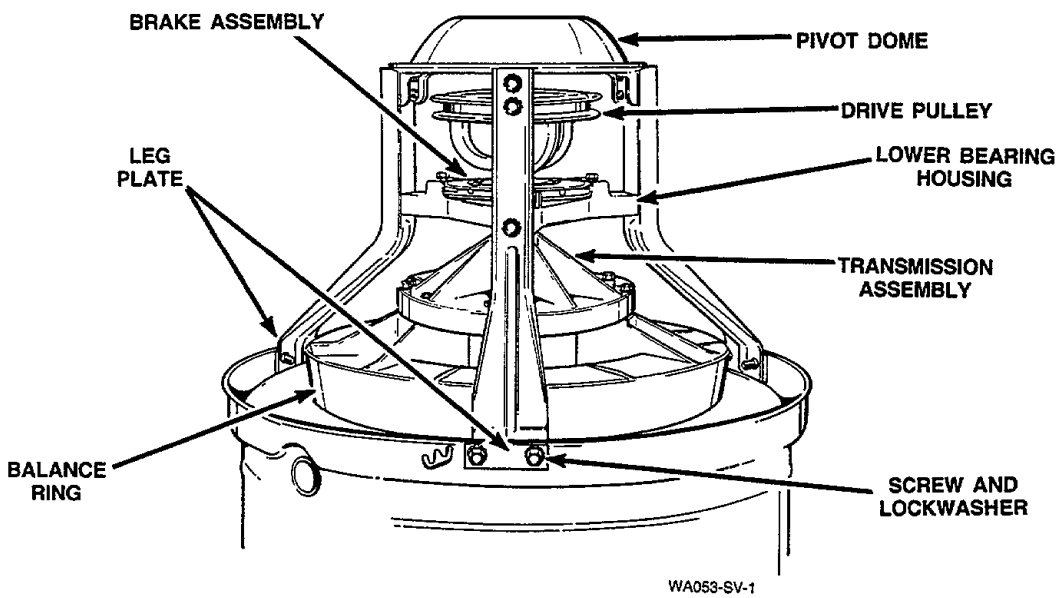

Figure 42

g. Remove belt from motor pulley and pull belt out through front of motor mounting bracket.

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

h. Disconnect motor wire harness from base wire harness at disconnect blocks, *Figure 28.*

i. Remove four screws holding motor and mounting bracket to washer base, *Figure 24,* then lift complete assembly out of washer.

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

j. Remove screw, washer and helix the drive pulley to input shaft of transmission assembly, *Figure 43.*

k. Remove drive pulley by tilting right side up and slide pulley out between right front and rear tub support legs.

IMPORTANT: The two large flat washers must be in place between spring and drive pulley when reassembling. See *Figure 44* for assembly sequence.

NOTE: When reassembling, place a small amount of No. 03200 Lubricant to top side of drive pulley that will be contacting large flat washers. Lubricate helix ramps with No. 03200 Lubricant. See *Figure 44.*

33. BRAKE ASSEMBLY

a. Remove drive pulley and helix, *paragraph 32.*

b. Using a right angle needle nose pliers, remove spring from around lower transmission tube (located inside brake assembly), *Figure 44.*

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

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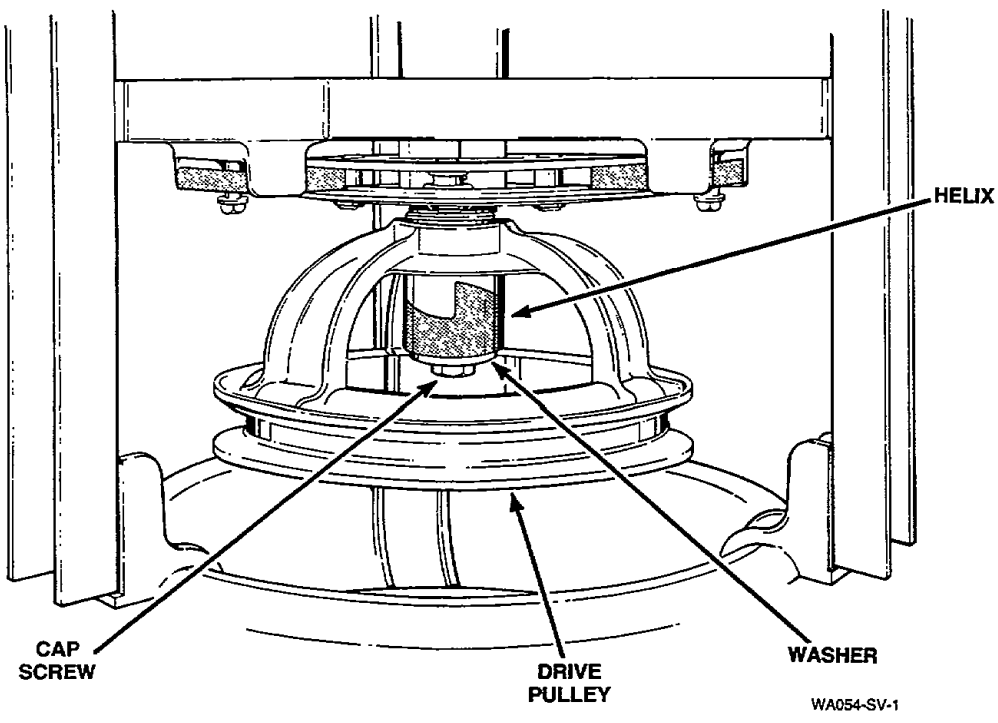

Figure 43

c. Remove three screws holding brake pads, rubber sleeves and brake assembly to lower bearing housing, *Figure 44,* then remove brake assembly, pads and spacer 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.

NOTE: Refer to *Figure 44* 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.

34. LOWER BEARING HOUSING

a. Remove two screws from the bottom edge of the front panel, *Figure 21.*
b. Pull bottom of panel away from washer until the hold-down clips (located on the top flange of the panel) disengage from slots in cabinet top, *Figure 21.*
c. Remove two cabinet top hold-down screws, and hinge cabinet top or remove, *paragraph 26.*
d. Remove agitator, *paragraph 16.*
e. Disconnect filler hose from backflow preventer, *Figure 33.*

NOTE: Through Serial No. R8237277YK — When reinstalling the filler hose, the white line on the hose must be aligned with the center line of the backflow preventer, Figure 33. A one eighth inch clearance is necessary to prevent the hose from rubbing on the flange of the tub cover, *Figure 34.* Loosen hose clamp and move hose to obtain the proper clearance.

Starting Serial No. R8237278YK —When reinstalling the filler hose, the white dot on hose must be aligned with the arrow on the backflow preventer, *Figure 33;* and white line on hose that connects to tub cover must be aligned with line located on top side of outer tub cover, *Figure 33.* Make sure the hose is in its natural position (not kinked or twisted) and is parallel with the rear edge of the washer cabinet. If it is not, loosen hose clamp and straighten the hose.

f. Reach in through front of motor mounting bracket 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 and helper spring are overstretched, washer operation will be affected.

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

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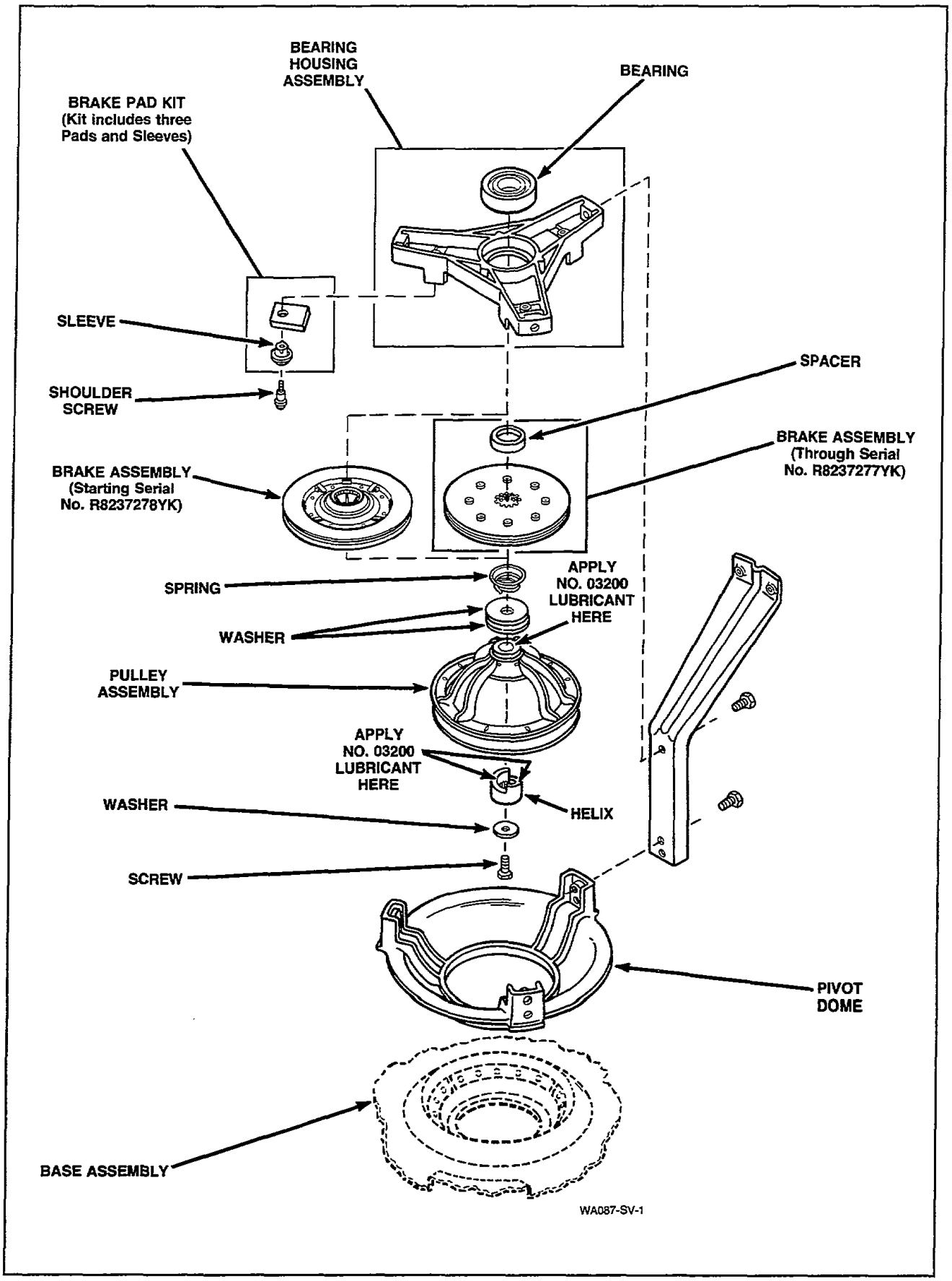

BEARING HOUSING ASSEMBLY
BEARING
BRAKE PAD KIT (Kit includes three Pads and Sleeves)
SLEEVE
SHOULDER SCREW
SPACER
BRAKE ASSEMBLY (Through Serial No. R8237277YK)
BRAKE ASSEMBLY (Starting Serial No. R8237278YK)
SPRING
APPLY NO. 03200 LUBRICANT HERE
WASHER
PULLEY ASSEMBLY
APPLY NO. 03200 LUBRICANT HERE
HELIX
WASHER
SCREW
PIVOT DOME
BASE ASSEMBLY
WA087-SV-1

Figure 44

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

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

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

i. Using No. 229P4 Spring Hook Tool, unhook the five centering springs from lower edge of outer tub, *Figure 41.*

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

j. Disconnect hose between outer tub and pump assembly.

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

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

IMPORTANT: Through Serial No. R8237277YK — When turning complete tub assembly upside-down, be careful not to damage the out-of-balance switch trigger (located on outer tub cover).

n. Remove screw, washer and helix holding drive pulley to transmission shaft, *Figure 43.*
o. Remove drive pulley from transmission shaft, *Figure 43.*
p. Remove two large flat washers from transmission shaft, *Figure 43.*
q. Use a right angle needle nose pliers and remove spring from around lower transmission tube (located inside brake assembly).

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

r. Remove three screws and rubber sleeves holding brake pads to lower bearing housing, *Figure 44.*
s. Lift brake assembly, pads and spacer off transmission tube.
t. Remove three screws holding lower bearing housing to tub support legs, *Figure 44.*
u. Rotate bearing housing past legs, then carefully lift bearing housing off transmission tube.

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

IMPORTANT: When installing lower bearing housing, apply No. 27604P Anti-Seize compound to area of transmission tube that will be contacting the bearing, *Figure 45.*

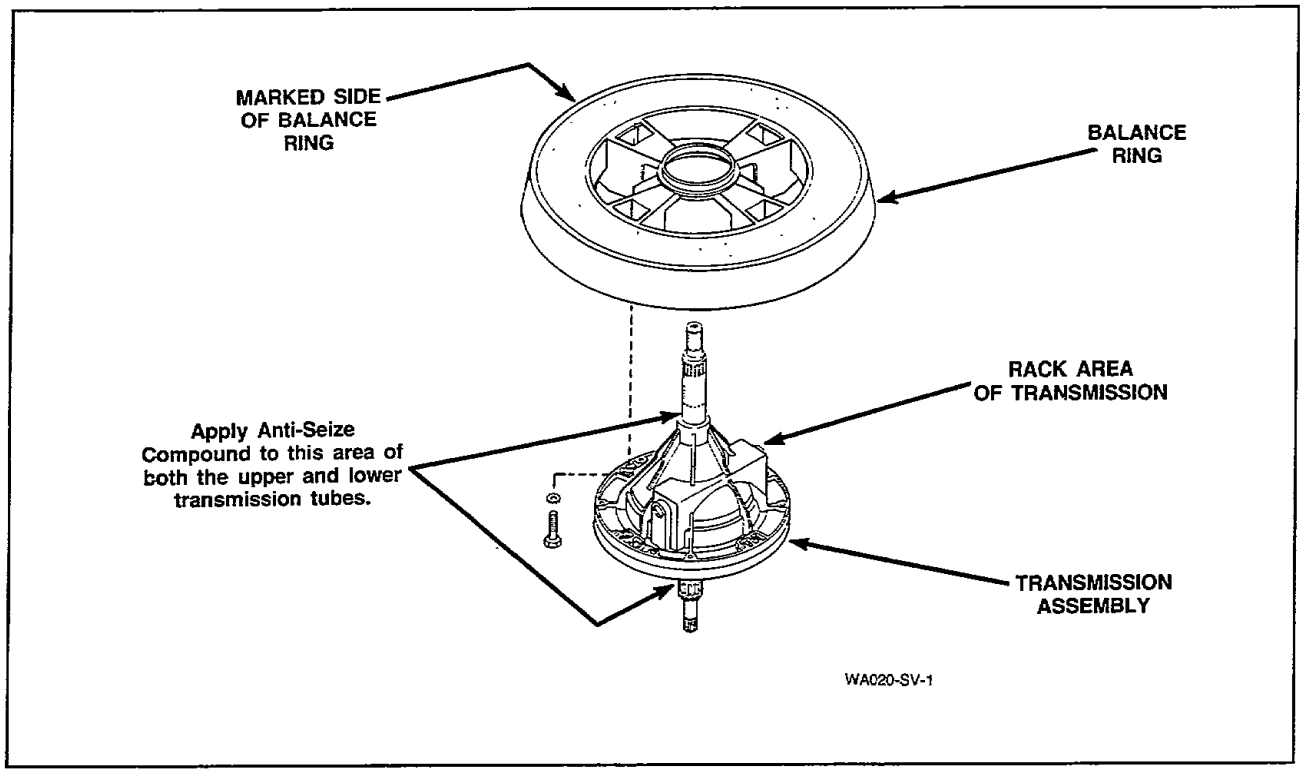


Figure 45

TO REMOVE THE BEARING

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

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

35. TRANSMISSION ASSEMBLY

a. Remove two screws from bottom edge of front panel, *Figure 21.*
b. Pull bottom of panel away from washer until hold-down clips (located on top flange of panel) disengage from slots in cabinet top, *Figure 21.*
c. Remove two cabinet top hold-down screws, *Figure 28,* and hinge cabinet top or remove, *paragraph 26.*
d. Loosen hose clamp and disconnect filler hose from backflow preventer, *Figure 33.*

NOTE: Through Serial No. R8237277YK — When reinstalling the filler hose, the white line on hose must be aligned with the center line of the backflow preventer, *Figure 33.* A one eighth inch clearance is necessary to prevent the hose from rubbing on the flange of the tub cover, *Figure 33.* Loosen hose clamp and move hose to obtain the proper clearance.

Starting Serial No. R8237278YK —When reinstalling the filler hose, the white dot on hose must be aligned with the arrow on the backflow preventer, *Figure 33;* and white line on hose that connects to tub cover must be aligned with line located on top side of outer tub cover, *Figure 33.* Make sure the hose is in its natural position (not kinked or twisted) and is parallel with the rear edge of the washer cabinet. If it is not, loosen hose clamp and straighten the hose.

e. **Through Serial No. R8237277YK —** Remove eight clips holding cover to outer tub, *Figure 34.* Remove cover from outer tub and set off to side of washer to avoid damage, then remove the old cover gasket.

NOTE: **Through Serial No. R8237278YK — When installing the outer tub cover, always use a new cover gasket. Lubricate the gasket with liquid soap to aid in the assembly. Cover must be placed on the outer tub so the notch on the top edge of the outer tub cover is directly over the left front clip hole in the tub,** *Figure 34.* **Starting with this hole, place each spring clip in its respective hole and snap in place. See** *Figure 34* **for proper clip installation.**

Starting Serial No. R8237278YK — 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 34.* 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.

Starting Serial No. R8237278YK — 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 drain tabs, lay gasket into the gasket groove of the tub cover, ***Figure 35.*** **Using the semi-curled end of the tub cover tool, Part No. 273P4,** ***Figure 35,*** **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.

With the tub cover tilted at approximately a 45 degree angle, ***Figure 36,*** **insert the positioning pin on the tub cover into the notch on the outer tub flange. The two bleach drain 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 insure 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 insure 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.

f. Remove the four screws and washers holding the washtub to the hub, *Figure 37.*

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

g. Lift the washtub and lint filter or clothes guard out of outer tub.

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

h. Remove drive bell, *paragraph 17,* steps "a" through "k".
i. Remove hex nut using No. 237P4 Hex Wrench.
j. Remove hub from splines on transmission tube.

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

k. Remove old water seal from outer tub.

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

NOTE: When reinstalling or replacing outer tub, we recommend installing a new No. 495P3 Hub and Seal Kit, ***paragraph 30.***

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

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

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

IMPORTANT: When removing or reinstalling complete outer tub into the washer (with transmission, balance ring and pivot dome attached), damage could occur to the idler lever if 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 the idler pulley could be chipped. A bent idler lever will cause misalignment of idler pulley with drive belt, and a chipped pulley will damage the belt.

We recommend that before removing or reinstalling 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.

n. Using No. 229P4 Spring Hook Tool, unhook five centering springs from lower edge of outer tub, *Figure 41.*

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

o. Disconnect hose between outer tub and pump assembly.

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.

p. Remove pressure hose from pressure accumulator. Then remove tape holding the pressure hose to the outer tub.
q. Grasp outer tub and lift complete tub assembly (with transmission, balance ring and pivot dome attached) straight up and out of washer cabinet.
r. Turn outer tub upside-down and set on protective padding.
s. Remove screw, washer and helix holding drive pulley to transmission shaft. Then remove drive pulley and large flat washer(s) from transmission.
t. Using a right angle needle nose pliers, remove the spring from around the lower transmission tube (located inside the brake assembly).

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.

u. Remove screws and lockwashers holding each support leg to outer tub, *Figure 42*, then lift pivot dome, 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 45.*

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

v. Remove four screws and lockwashers holding the transmission assembly to balance ring.
w. 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. 27604P Anti-Seize compound be applied to the area of the transmission tubes where they will be contacting the upper and lower bearings, *Figure 45.*

When reinstalling transmission assembly, note there is a mark located on outer edge of balance ring. This mark indicates heavy side of ring. This heavy side must be installed opposite the rack of the transmission assembly, *Figure 45.* 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.

TO DISASSEMBLE THE TRANSMISSION ASSEMBLY (Refer to *Figure 46* 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. Remove remaining five screws and lockwashers completely.
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 a helix onto shaft and hold helix with a locking pliers.

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

IMPORTANT: Carefully examine 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 oil should be put in track of transmission case where internal gear will ride.

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 46,* must be facing outward. This is the end that will mate with the helix.

(continued on Page 79)

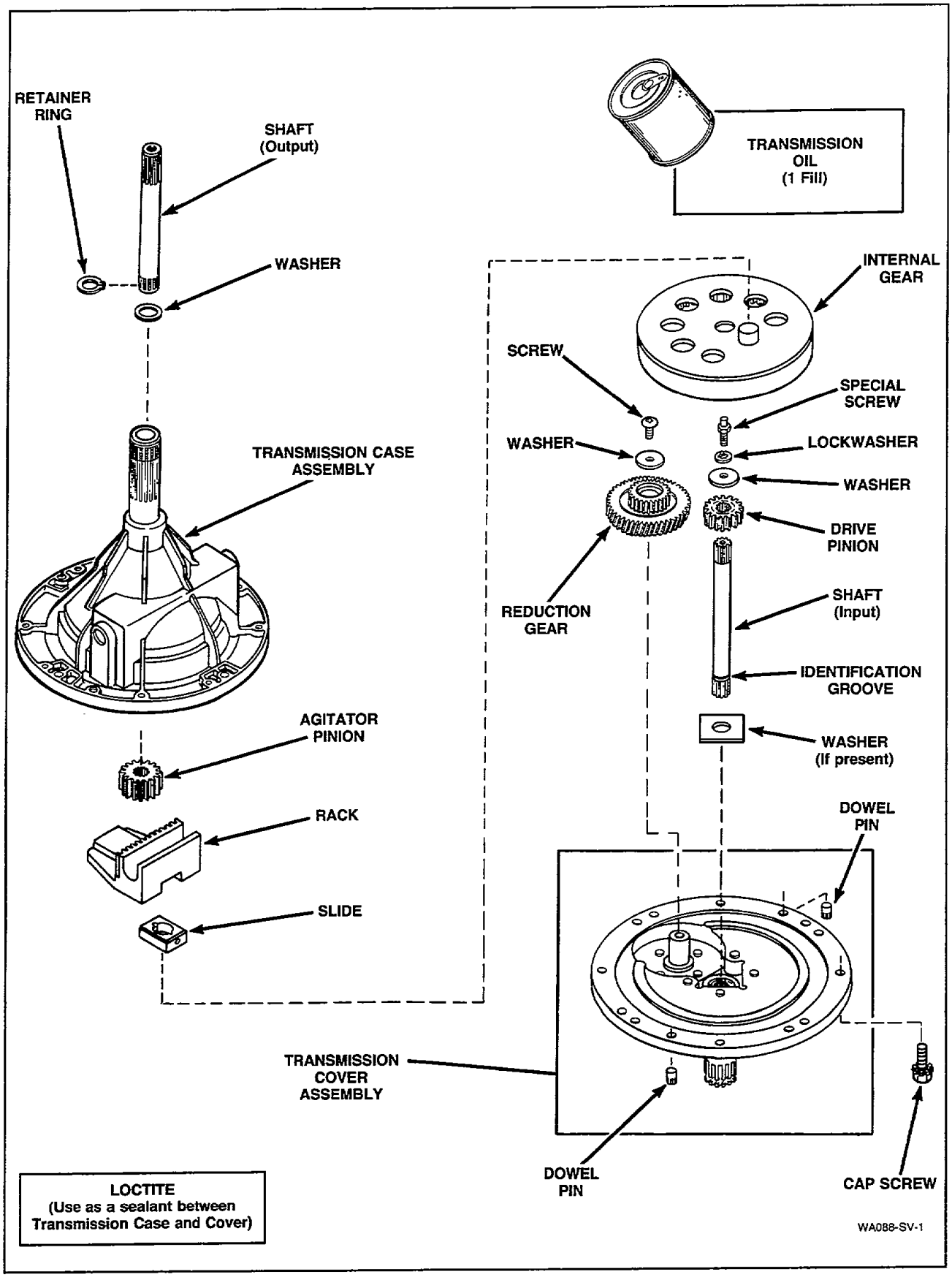

RETAINER RING
SHAFT (Output)
WASHER
TRANSMISSION CASE ASSEMBLY
AGITATOR PINION
RACK
SLIDE
TRANSMISSION OIL (1 Fill)
INTERNAL GEAR
SCREW
SPECIAL SCREW
WASHER
LOCKWASHER
WASHER
DRIVE PINION
REDUCTION GEAR
SHAFT (Input)
IDENTIFICATION GROOVE
WASHER (If present)
DOWEL PIN
TRANSMISSION COVER ASSEMBLY
DOWEL PIN
CAP SCREW
LOCTITE (Use as a sealant between Transmission Case and Cover)
WA088-SV-1

Figure 46

j. Place the square washer (if present) over shaft and into position within the cover.
k. 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.

l. Place reduction gear on stub shaft of cover and install screw and washer.

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

m. 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).

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

36. BALANCE RING

a. Remove transmission assembly, *paragraph 35,* steps "a" through "w".
b. Lift balance ring off outer tub.

IMPORTANT: When reinstalling balance ring, note there is a mark located on the outer edge of the balance ring. This mark indicates the heavy side of ring. This heavy side must be installed opposite the rack of the transmission assembly, *Figure 45.*

37. UPPER BEARING ASSEMBLY

a. Remove transmission assembly, *paragraph 35,* steps "a" through "w".
b. Remove screws and lockwashers holding each support leg to outer tub, *Figure 42.* 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 both sides of outer tub flange when reinstalling support legs. (The thinner plate must be installed between the leg and tub flange and the thicker plate must be installed on the outside of the tub flange.) Do not overtighten screws as this could cause stripping or porcelain damage.

c. Remove three screws holding upper bearing and housing to bottom of outer tub, *Figure 47.*

NOTE: Replace bearing and housing as an assembly, and be sure flinger is properly positioned between the outer tub and bearing assembly, *Figure 47.*

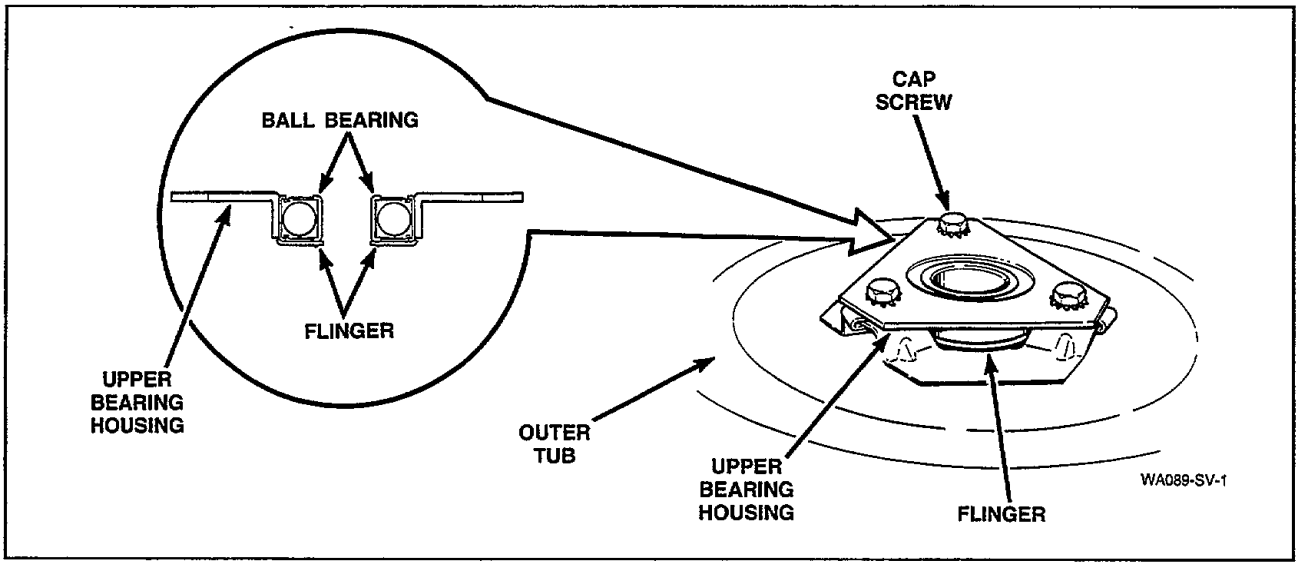


Figure 47

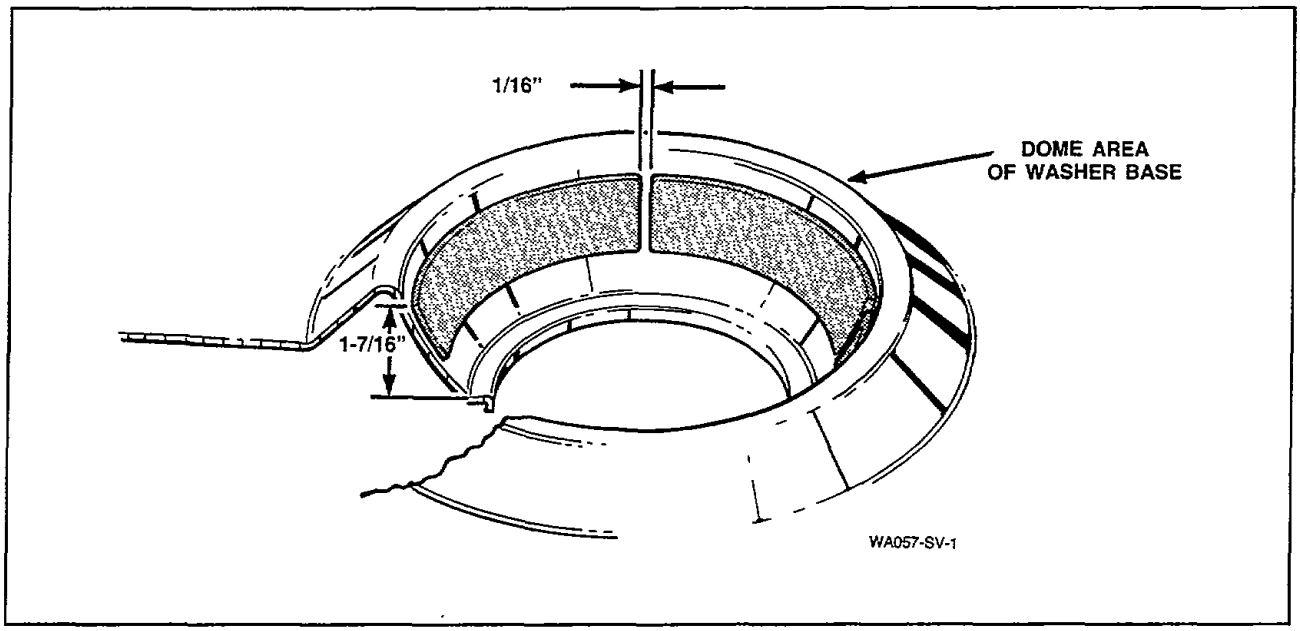


Figure 48

38. SNUBBER PADS

a. Remove transmission assembly, *paragraph 35,* steps "a" through "r".
b. Scrape old snubber pads from washer base.
c. Thoroughly clean area of washer base where new snubber pads will be installed.

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

TO INSTALL THE NO. 434P3 SNUBBER PAD KIT

a. Brush approximately a three quarter inch wide strip of No. 22506P Adhesive to dome area of washer base where new pads will be applied.

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

b. Carefully align and apply new snubber pads with the fluffed side against base dome so they are equally spaced, *Figure 48.*

IMPORTANT: The top edge of the snubber pads should be one and seven sixteenth inches from lower part of dome with a distance of one sixteenth inch between pads, *Figure 48.*

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

c. Apply a liberal amount of No. 26594P Silicone Lubricant to surface of the new pads that will contact pivot dome.

d. Carefully place tub module back into washer making sure pivot dome is positioned properly in the dome recess of washer base, *Figure 49.*

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

e. Use No. 229P4 Spring Hook Tool and starting with rear springs, hook five centering springs into lower edge of outer tub.

(continued on Page 82)

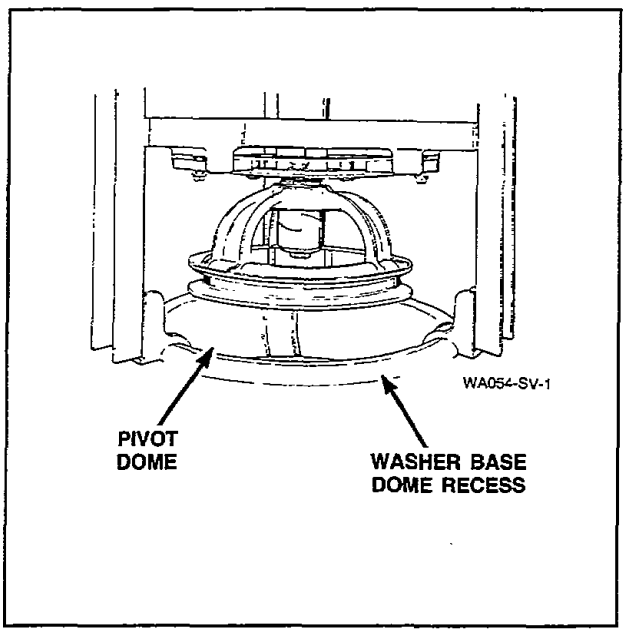


Figure 49

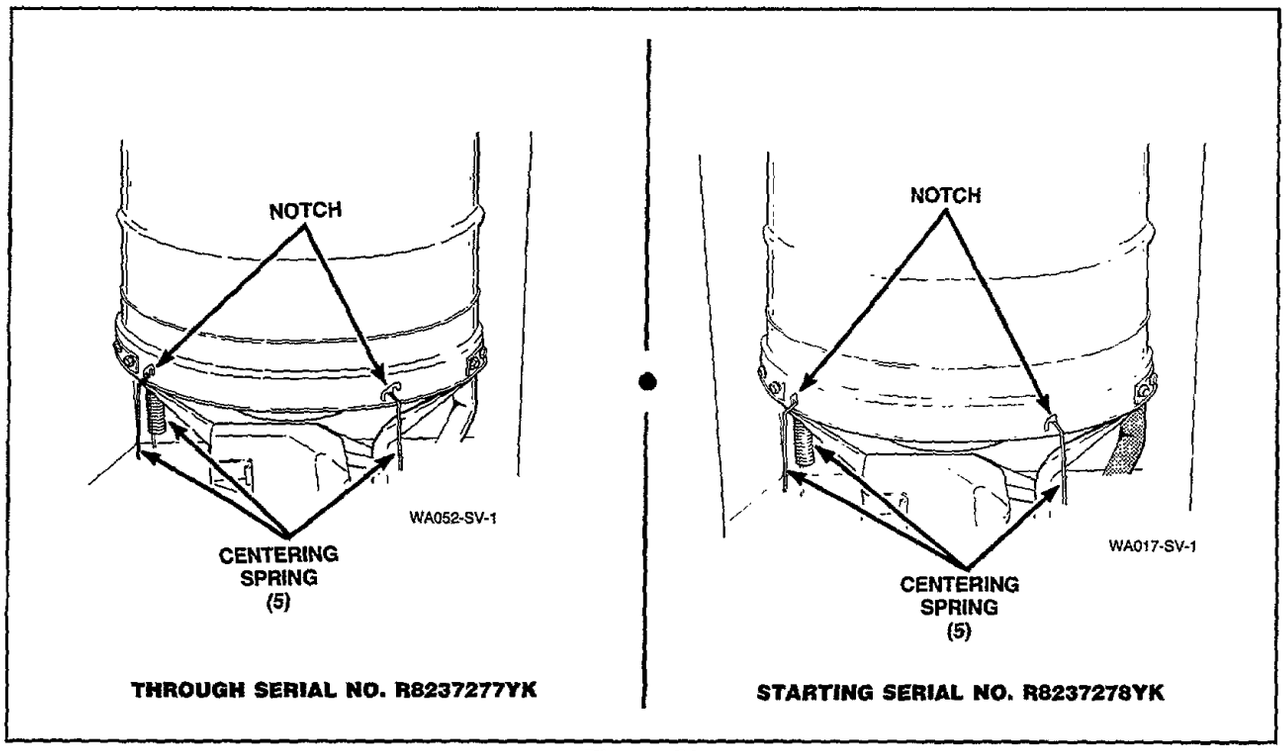


Figure 50

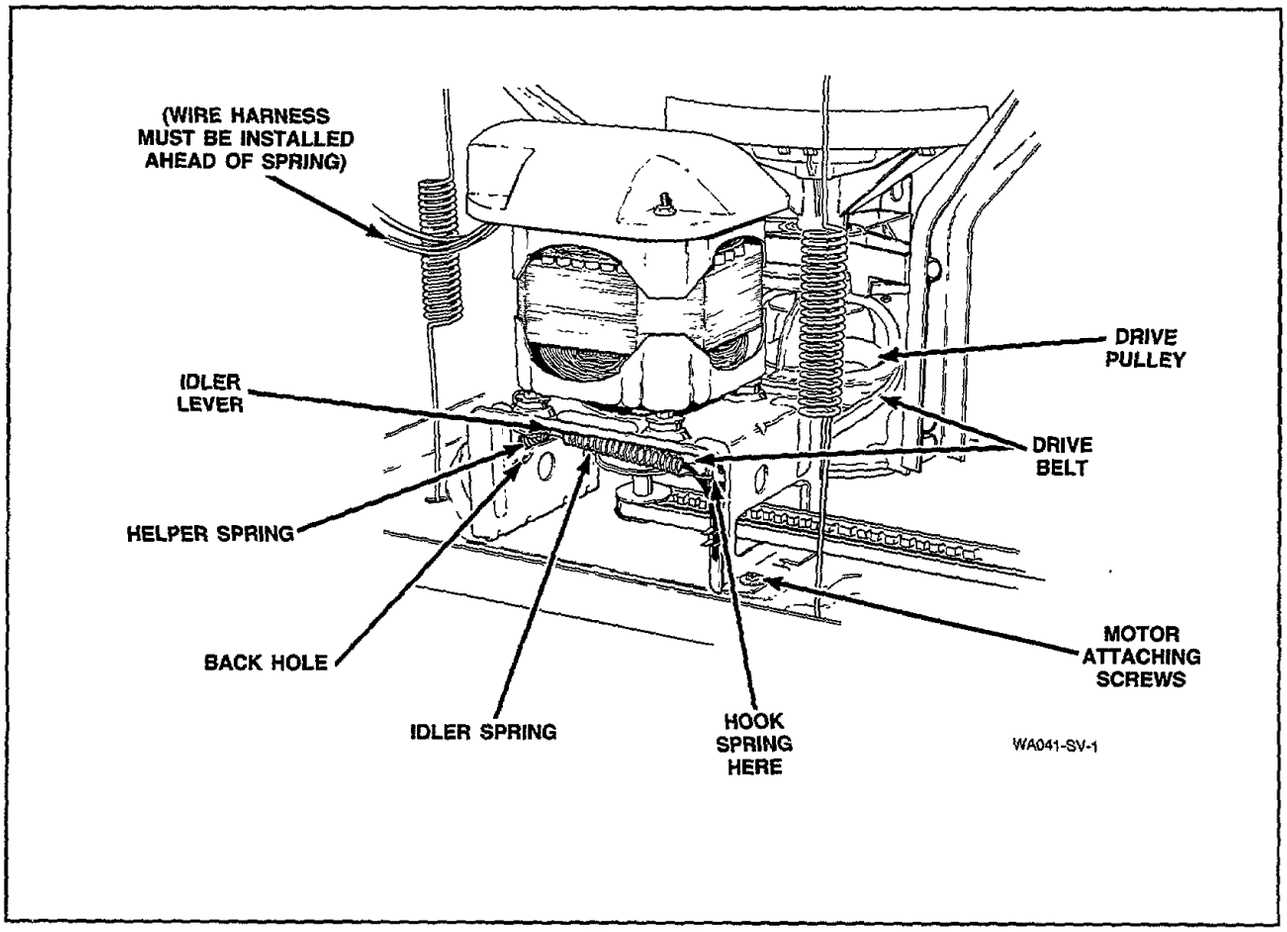


Figure 51

NOTE: **Through Serial No. R8237277YK — Springs must be hooked into the center of the three notches, *Figure 50.***

Starting Serial No. R8237278YK —Springs must be hooked in the top of the two notches.

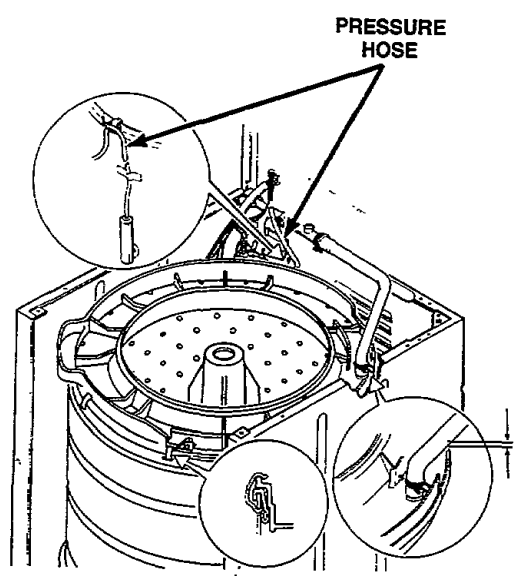
f. Connect hose from outer tub to pump and tighten hose clamp.
g. Reconnect idler spring to the clip on motor mounting bracket, and the helper spring into back hole in mounting bracket, *Figure 51.*
h. Place drive belt on motor pulley, reach around right side of motor, starting with belt on right side of large pulley, run belt onto large pulley.
i. Route the pressure hose as shown in *Figure 52.* Then route the pressure hose back up through the hole in the cabinet top.
j. Reconnect filler hose to backflow preventer, *Figure 33.*

NOTE: **Through Serial No. R8237277YK — When installing filler hose, white line on hose must be aligned with center line of the backflow preventer, *Figure 33.* A one eighth inch clearance is necessary to prevent the hose from rubbing on flange of tub cover, *Figure 34.* Loosen hose clamp and move hose to obtain proper clearance.**

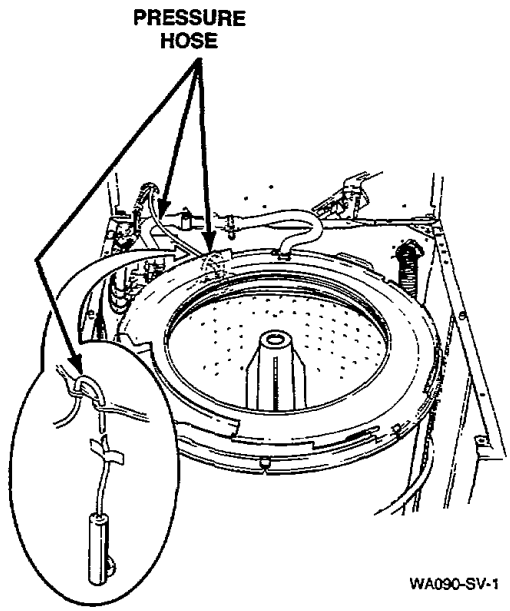
Starting Serial No. R8237278YK — When reinstalling the filler hose, the white dot on hose must be aligned with the arrow on the backflow preventer, *Figure 33;* and the white line on hose that connects to tub cover must be aligned with line located on top side of outer tub cover, *Figure 33.* Make sure the hose is in its natural position (not kinked or twisted) and is parallel with the rear edge of the washer cabinet. If it is not, loosen hose clamp and straighten the hose.

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



THROUGH SERIAL NO. R8237277YK



STARTING SERIAL NO. R8237278YK

Figure 52

SECTION IV
Adjustments

39. LEVELING LEGS (Refer to *Figure 53)*

a. Loosen locknuts and thread leveling legs into washer base as far as possible.
b. Turn appropriate leveling leg(s) out of base only until washer is level. Keep washer as close to floor as possible.
c. Install rubber cups over leveling legs.

IMPORTANT: All four legs must rest firmly on floor so weight of washer is evenly distributed. Washer must not rock.

d. Tighten locknuts securely against bottom of the washer base after washer has been leveled.

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

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

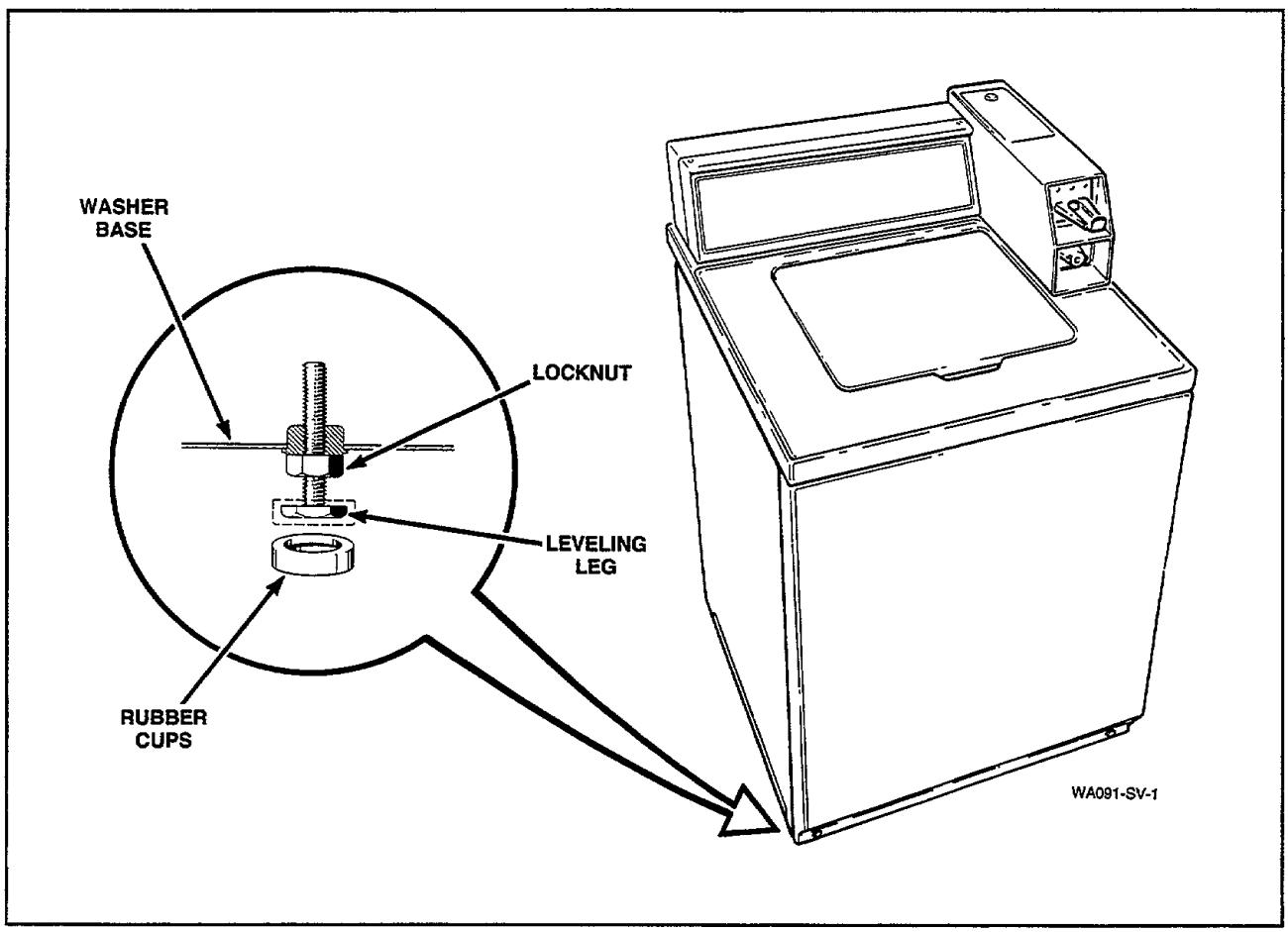


Figure 53

40. PRESSURE SWITCH (Refer to *Figure 54)*

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, pressure switch can be adjusted in the field.

The maximum water fill level can be increased by turning the adjusting screw **CLOCKWISE,** or decreased by turning the screw **COUNTERCLOCKWISE**. One-quarter turn of the adjusting screw represents approximately one inch (2.54 cm) increase or decrease of water level in tub.

IMPORTANT: DO NOT turn adjusting screw more than three-quarters of a turn in either direction.

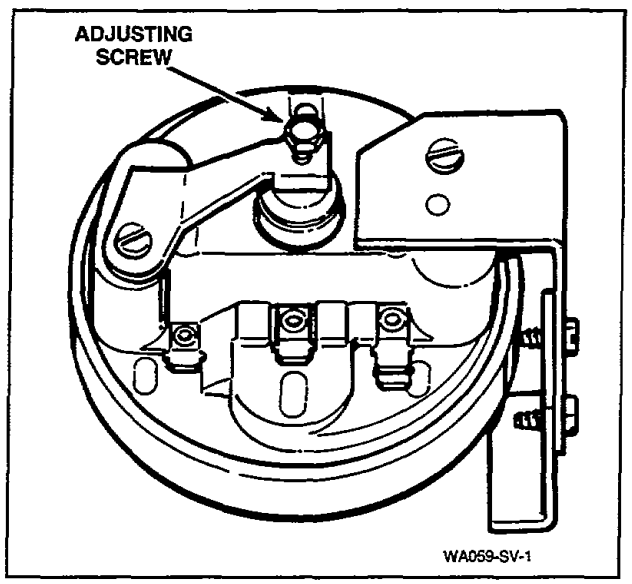


Figure 54

41. BELT — Agitate and/or Spin

No belt adjustment is required.

NOTE: When motor is installed in washer, motor and mounting bracket must be shifted toward rear of the washer to its limit of travel within the mounting bracket attaching screws.

42. BELT — Pump

NOTE: Adjustment must be made after motor has been properly positioned, see *paragraph 41.*

a. Remove front panel, *paragraph 18.*
b. Loosen two front mounting screws, *Figure 55,* then loosen the rear screw.
c. 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 56.*
d. After belt tension is obtained, tighten three pump attaching screws, *Figure 55.*

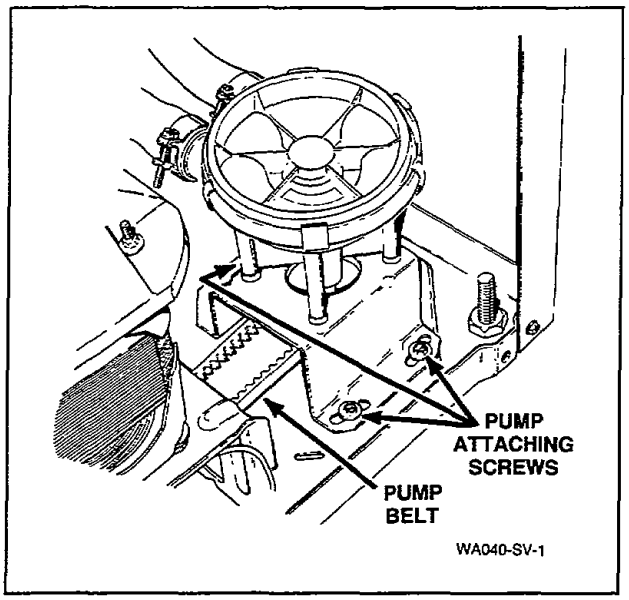


Figure 55

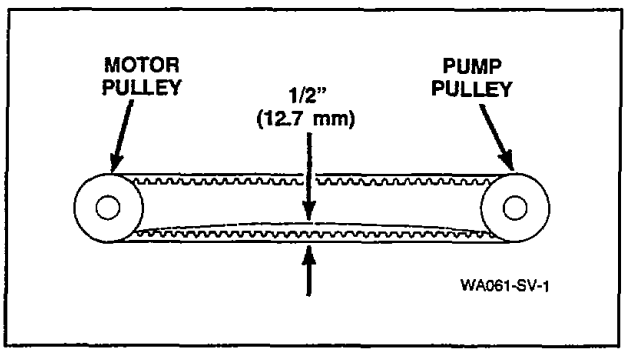


Figure 56

43. OUT-OF-BALANCE SWITCH TRIGGER — Through Serial No. R8237277YK

NOTE: The trigger is centered on the mounting screw at the factory, *Figure 57.*

a. Remove front panel, *paragraph 18.*
b. Raise or remove cabinet top, *paragraph 26.*
c. Loosen screw holding trigger to tub cover, *Figure 57,* move trigger to the right (increases sensitivity) or to the left (decreases sensitivity).

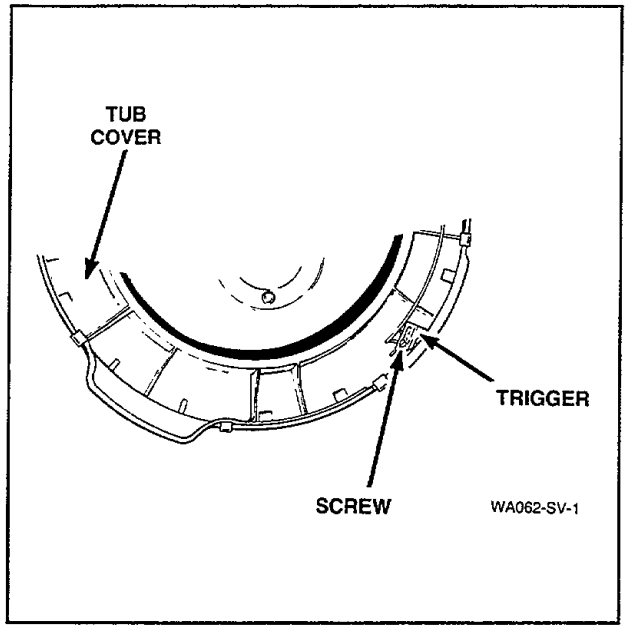


Figure 57

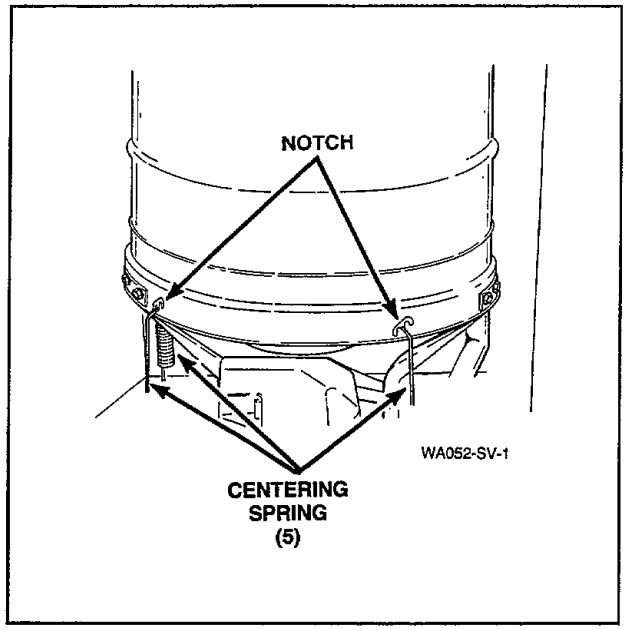


Figure 58

IMPORTANT: If the trigger repeatedly trips the out-of-balance switch lever, check the centering of the agitator within the loading door opening. Centering springs may have to be repositioned in the upper or lower notch of the lower edge of the outer tub (positioned in center notch at factory, *Figure 58),* to center the agitator within the door opening.

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

SECTION V
Service Helps

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

44. NO HOT WATER

POSSIBLE CAUSE	TO CORRECT
Hot water supply faucet is closed.	Open faucet.
Water supply is cold.	Check water heater.
Kinked hot water inlet hose.	Straighten or replace hose.
Clogged mixing valve screen, or clogged screen in outer end of inlet hose nearest water supply faucet.	Disconnect hot water inlet hose, and clean or replace screen(s).
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 hose.
Broken, loose, or incorrect wiring.	Refer to appropriate Wiring Diagram.
† Inoperative electronic control.	Refer to SECTION VII to check out the electronic control.

45. NO COLD WATER

POSSIBLE CAUSE	TO CORRECT
Cold water supply faucet is closed.	Open faucet.
Kinked cold water inlet hose.	Straighten or replace hose.
Clogged mixing valve screen, or clogged screen in the outer end of inlet hose nearest the water supply faucet.	Disconnect cold water inlet hose, and clean or replace screen(s).
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 hose.
Broken, loosen, or incorrect wiring.	Refer to appropriate Wiring Diagram.
† Inoperative electronic control.	Refer to SECTION VII to check out the electronic control operation.

*Mechanical Timer Models only.
†Electronic Control Models only.

46. NO WARM WATER

POSSIBLE CAUSE	TO CORRECT
No hot water.	Refer to *paragraph 44.*
No cold water.	Refer to *paragraph 45.*

47. WATER FILL DOES NOT STOP AT PROPER LEVEL

POSSIBLE CAUSE	TO CORRECT
* Inoperative timer.	Test timer and replace if inoperative.
Inoperative pressure switch.	Test switch and replace if inoperative.
Air leak in pressure hose.	Replace hose.
Sediment on or under the mixing valve diaphragm, defective diaphragm, or armature binding in armature guide.	Disassemble and clean mixing valve. Replace deteriorated or not-easily-cleaned components. Refer to Parts Section in this manual for assembly sequence of valve.
Broken, weak, or missing mixing valve armature spring.	Disassemble valve and replace the spring.
Siphoning action started in washer which will cause water to be siphoned from washer during cycle due to the end of drain hose being lower than drain elbow at rear of washer.	Install No. 297P3 Siphon Break Kit.
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 VII to check out the electronic control operation.

48. TIMER DOES NOT ADVANCE (Mechanical Timer Models Only)

POSSIBLE CAUSE	TO CORRECT
* Timer is designed to pause during fill periods.	Allow for completion of fill period.
* Inoperative timer.	Test timer, and replaced if inoperative.
Loading door is open.	Close loading door.
Washer will not fill.	Timer pauses until pressure switch is satisfied.
Broken, loose, or incorrect wiring.	Refer to appropriate Wiring Diagram.

*Mechanical Timer Models only.
†Electronic Control Models only.

49. NO AGITATION

POSSIBLE CAUSE	TO CORRECT
* Inoperative timer.	Test timer, and replace if inoperative.
Inoperative action switch.	Test switch and replace if inoperative.
Inoperative motor.	Test motor and replace if inoperative.
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.	Replace transmission assembly.
Sheared motor pulley roll pin.	Remove drive motor, and replace roll pin and any other damaged parts.
Drive motor overload protector has cycled.	Refer to *paragraph 53.*
Bind in pump.	Disassemble and clean pump or replace pump.
Loading door is open or door switch is inoperative.	Close loading door or test switch and replace if inoperative.
† Inoperative electronic control.	Refer to SECTION VII to check out the electronic control operation.

50. CONSTANT AGITATION

POSSIBLE CAUSE	TO CORRECT
* Inoperative timer.	Test timer and replace if inoperative.
Inoperative speed switch.	Test switch and replace if inoperative.
Shorted or incorrect wiring.	Refer to appropriate Wiring Diagram.
† Inoperative electronic control.	Refer to SECTION VII to check out the electronic control operation.

*Mechanical Timer Models only.
†Electronic Control Models only.

51. SLOW SPIN OR NO SPIN

POSSIBLE CAUSE	TO CORRECT
* Inoperative timer.	Test timer, and replace if inoperative.
Inoperative speed switch.	Test switch and replace if inoperative.
Loading door is open or door safety switch is inoperative.	Close loading door, or test switch and replace if inoperative.
Bind in the water pump.	Dissassemble and clean pump or replace pump.
Inoperative drive motor. Loose or broken drive belt.	Test motor and replace if inoperative. Adjust or replace belt.
Washer has gone OUT-OF-BALANCE.	Open loading door to reset OUT-OF-BALANCE switch
No clearance or stuck brake pads.	Free sticky brake pads or replace pads.
Broken, loose or incorrect wiring.	Refer to appropriate Wiring Diagram.
† Inoperative electronic control.	Refer to SECTION VII to check out the electronic control operation.

52. CONSTANT SPIN

POSSIBLE CAUSE	TO CORRECT
* Inoperative timer.	Test timer and replace if inoperative.
Inoperative drive motor.	Test motor and replace if inoperative.
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 VII to check out the electronic control operation.

53. DRIVE MOTOR OVERLOAD PROTECTOR CYCLES REPEATEDLY

POSSIBLE CAUSE	TO CORRECT
Excessive belt tension.	Adjust belts.
Inoperative motor overload protector.	Replace motor.
Bind in water pump.	Disassemble and clean water pump or replace pump.
Bind in transmission.	Replace transmission.
Brake pads binding.	Free binding pads or replace pads.

*Mechanical Timer Models only.
†Electronic Control Models only.

54. OUTER TUB DOES NOT EMPTY

POSSIBLE CAUSE	TO CORRECT
Kinked drain hose.	Straighten hose.
Obstruction in outer tub outlet hose.	Remove obstruction.
Inoperative water pump.	Dissassemble and clean pump or replace pump.
Loose or broken pump belt.	Adjust or replace belt.

55. EXCESSIVE VIBRATION

POSSIBLE CAUSE	TO CORRECT
Unbalanced load in tub.	Stop washer, redistribute load, then restart washer.
Broken, disconnected or centering spring(s) out of adjustment.	Connect or replace centering spring(s). Spring should be positioned as shown in *Figure 50.*
Washer is not properly leveled.	Adjust leveling legs.
Washer is installed on a weak, "spongy", 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.

56. WATER LEAKING FROM OUTER TUB

POSSIBLE CAUSE	TO CORRECT
Leaking water seal in outer tub.	Replace hub and seal kit, *paragraph 30.*
Hole in outer tub.	Replace outer tub.
Pressure hose 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 tub cover.	Remove obstruction.
Tub-to-pump hose leaking at clamp.	Tighten clamp.

SECTION VI
Test Procedures

To check continuity through motor harness and motor. The items within the parentheses are also being checked along with the wires.

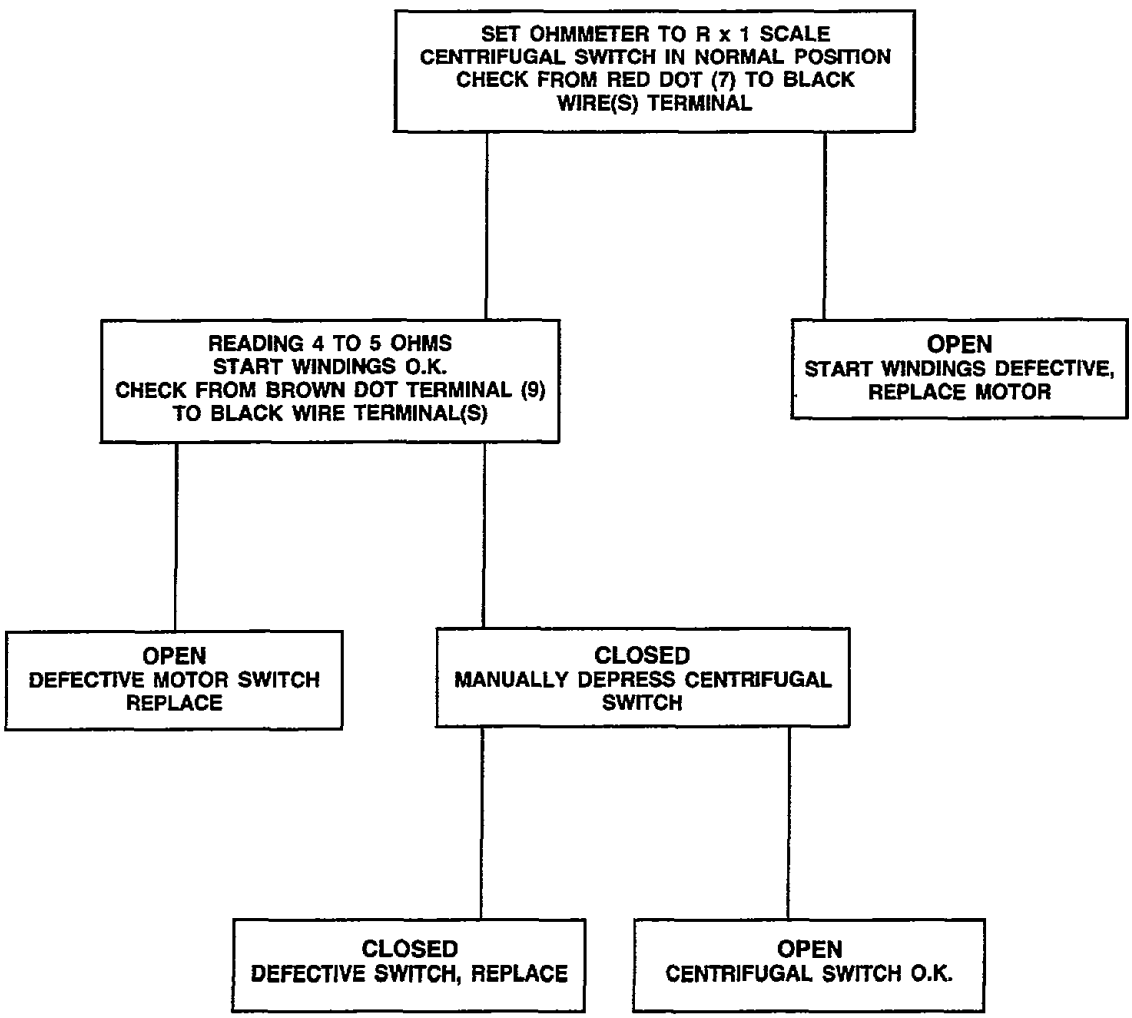
TP — Thermal Protector, MS — Motor Switch, SW — Start Winding, HW — High Winding, LW — Low Winding.

WIRES	MOTOR SWITCH NORMAL	OHM READINGS	MOTOR SWITCH OPERATED MANUALLY	OHM READINGS
Yellow to White	Continuity (TP)	0	Continuity (TP)	0
Red to Brown	Continuity (MS, SW)	4-5	OPEN	Infinite
Pink to White	Continuity (MS, HW, TP)	1-2	Continuity (MS, LW, TP)	3-4
Blue to White	Continuity (HW, TP)	1-2	Continuity (HW, TP)	1-2

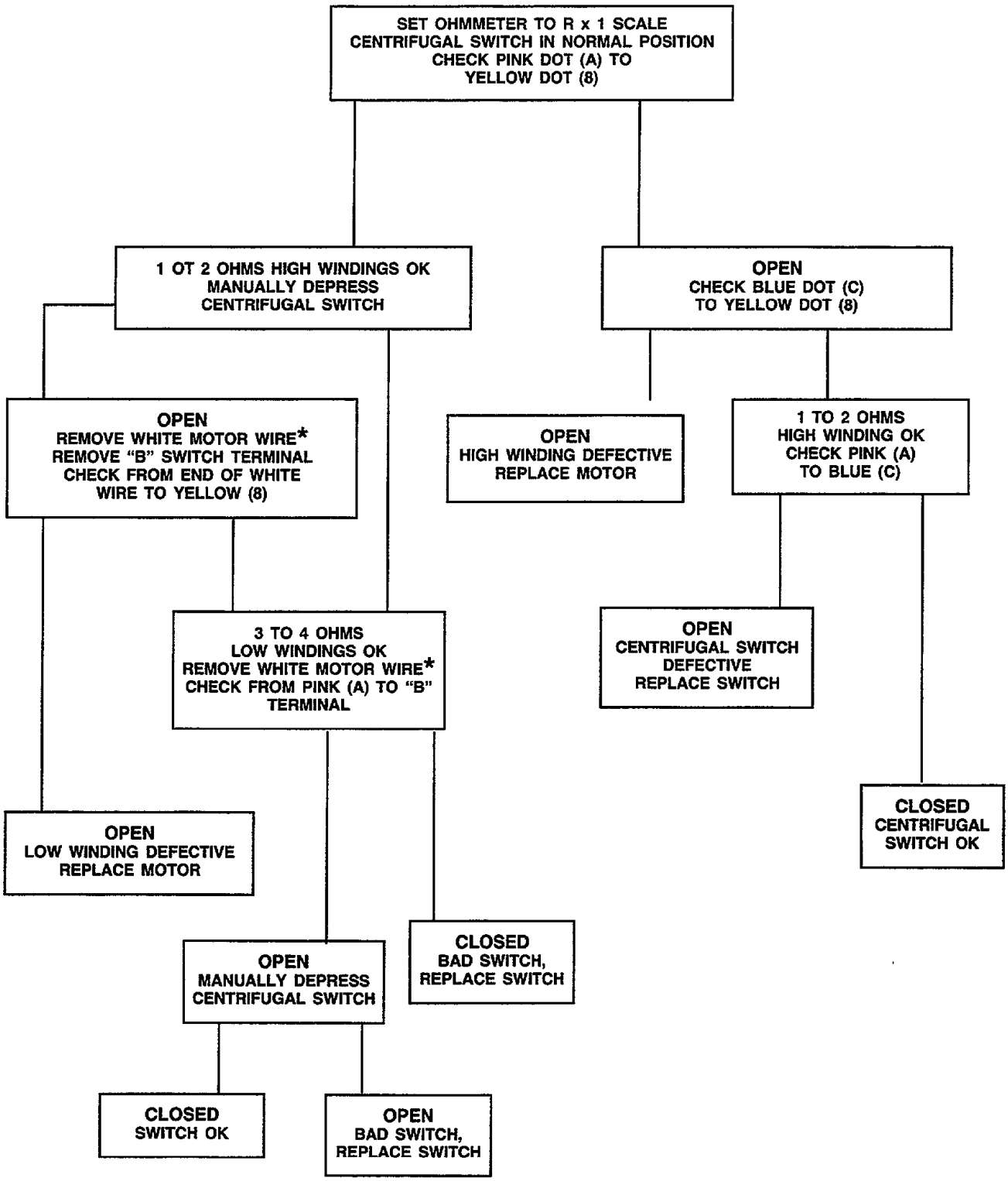
To check continuity through base harness, control harness, and timer for motor start circuit. Timer terminals involved are shown within the parentheses.

WIRES	TIMER SET FOR SPIN	TIMER SET FOR AGITATION
Blue to Brown	Continuity (K & G)	OPEN
Blue to Red	OPEN	Continuity (K & F)
Red to Yellow	Continuity (F & L)	OPEN
Brown to Yellow	OPEN	Continuity (G & L)

G.E. MOTOR CHECK
(Start Windings)



G.E. MOTOR CHECK
(High and Low Windings)



*Do not confuse the white wire coming from the wire harness to the white dot on the motor switch with the white wire coming from the motor to the "B" terminal.

SECTION VII
Service Procedures Unique to the Electronic Control Model Washers

57. ELECTRICAL REQUIREMENTS

(120 Volts, 60 Hertz, with Three-Prong Grounding Plug)

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

⚠WARNING

To reduce the risk of fire, electric shock or personal injury, all wiring and grounding MUST conform with the latest edition of the National Electrical Code, ANSI/NFPA 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 THE LAUNDRY ROOM HAS ADEQUATE ELECTRICAL POWER TO OPERATE THE WASHER.

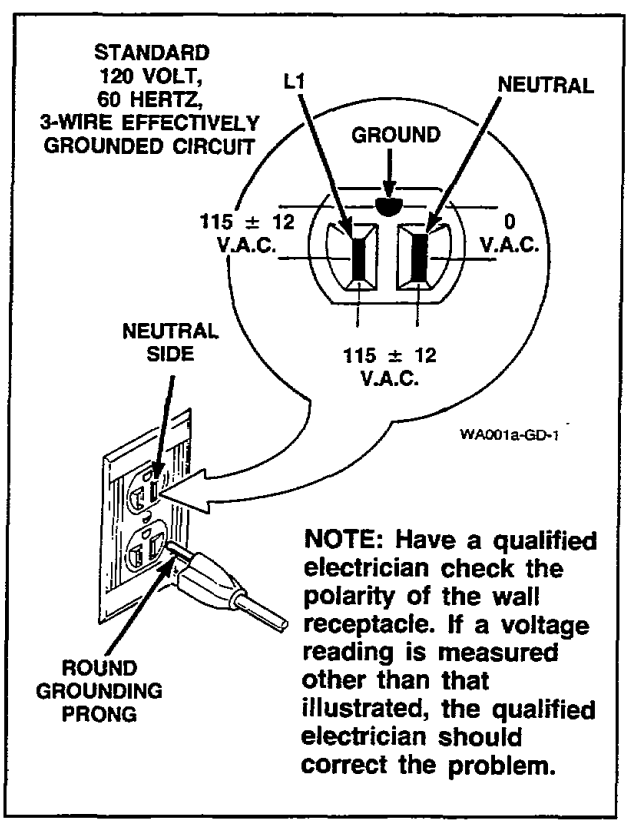


Figure 59

- The washer is designed to be operated on a separate branch, polarized, three-wire, effectively grounded 120 Volt, 60 Hertz, AC (alternating current), circuit protected by a **15 or 20 ampere** fuse, equivalent fusetron or circuit breaker.
- The three-prong grounding plug on the power cord should be plugged directly into a polarized three-slot effectively grounded receptacle rated 110/120 V.A.C. 15 or 20 Amp. See *Figure 59* for determining correct polarity of the wall receptacle.
- **DO NOT OPERATE OTHER APPLIANCES ON THE SAME CIRCUIT. DO NOT OVERLOAD CIRCUITS!** See *Figure 60.*

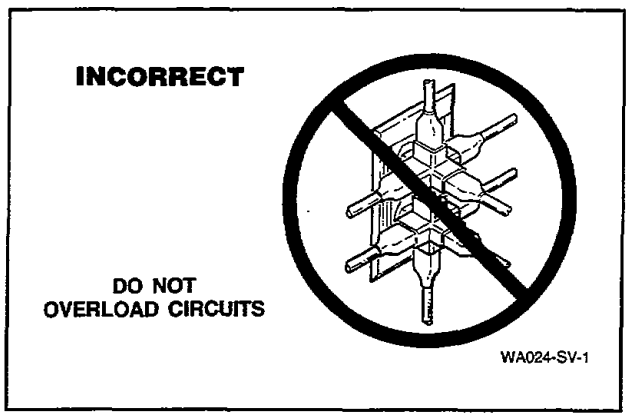


Figure 60

⚠WARNING

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

58. 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. 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 **if 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 the rear of the washer) and the other end to a known effective electrical ground.
- If the room's electrical supply does not meet the above specifications and/or if you are not sure the laundry room has an effective ground, have a qualified electrician or your local electrical utility company check it and correct any problems.

59. WASHERS EQUIPPED WITH AN ELECTRONIC CONTROL

After connecting the washer to the electrical supply, close the loading door and start the washer (refer to the OPERATING INSTRUCTIONS, supplied with washer). If the washer starts (WASH light will come on), but you have intermittent mixing valve or motor operation, it could mean the polarity or grounding of the outlet is incorrect. Have a qualified electrician check out the polarity and grounding and correct the problem, see *Figure 59.*

60. FUNCTIONS OF THE ELECTRONIC CONTROL

The control operates the washer and the four lights that indicate the cycle status and the condition of the washer. Two lead wires are available as inputs from a coin acceptor. The control has a cable assembly with a receptacle attached to mate with the plug end of the handheld programmer. The receptacle is securely mounted to the control hood with access through the service door opening in the metercase. (For convenience, the receptacle can be mounted to the control hood rear panel, *Figure 61.*) The programmer is used by authorized persons to set-up the control and washer.

CYCLES AND THEIR TIMES

There are three cycles — NORMAL, PERM PRESS AND DELICATE — selectable using the FABRIC SELECTOR switch. The fixed and programmable cycle times and the wash fill temperature options available, using the WASH TEMPERATURE switch are as shown on the cycle chart, see Page 99. The fabric selection and the water temperature options are only selectable during the first wash fill; after that the selector switches are "locked out" from the control and will have no effect.

The status lights operating during each portion of the cycle are indicated on the cycle chart, see Page 99. These status lights will operate regardless of whether the loading door switch contact is open or not.

SPECIAL OPTIONS (PROGRAMMABLE)

The rinse temperature can be programmed for WARM, LUKEWARM or COLD for the NORMAL wash cycle (see Page 99). Cold operates only the cold water side of the mixing valve. Lukewarm operates the cold water side of the mixing valve 100% and the hot water side 50% with a three second on/off cycle. Warm operates both the cold and hot water side of the mixing valve.

NOTE: If the wash temperature is selected as COLD, the rinse will also be COLD regardless of the programmed rinse temperature.

EXTRA RINSE

A two minute extra rinse cycle can be programmed via the handheld, see Page 103. The optional rinse cycle will precede the regular rinse cycle. The extra rinse temperature is always COLD.

HOT WASH CHARGE

There is a program option to charge extra for a hot wash. Special provisions of the coin acceptor maybe required to achieve this option. See instructions under COIN ACCEPTOR and CYCLE PROGRAMMING for further information.

COIN VALUE

The coin value(s) for a single or dual coin drop can be programmed, from five to 255 in increments of five. When first setting these values the programmer will start at 10. Use the MORE or LESS keys to change values. A coin slide does not have a variable coin value and "---" will be displayed.

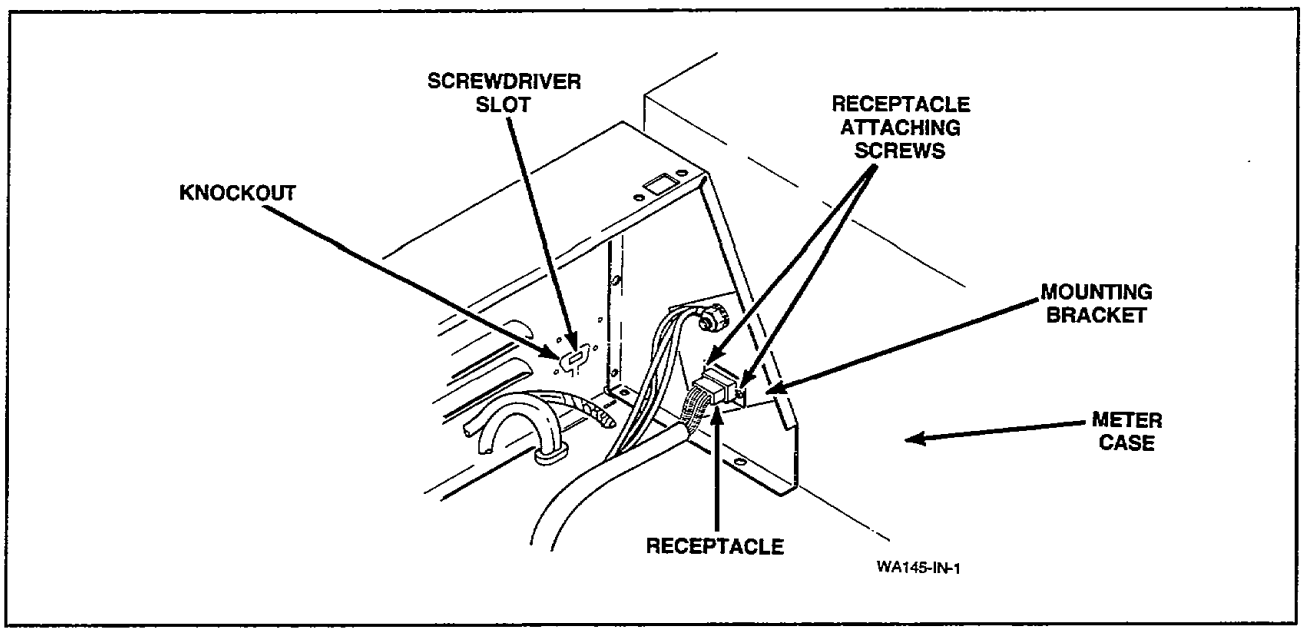


Figure 61

CYCLES (ALL TIMES IN MIN:SEC) Times are approximate

Status Light	Function	NORMAL Water Temp	NORMAL Time	PERM PRESS Water Temp	PERM PRESS Time	DELICATE Water Temp	DELICATE Time	Function
WASH	Wash Fill	H,W,C	Variable	H,W,C	Variable	H,W,C	Variable	
	Wash Agitate		7-15 by 1		7-15 by 1		:20	Pause
							:40	Agitate
							:20	Pause
							:40	Agitate
							:20	Pause
							:40	Agitate
							:20	Pause
							:40	Agitate
							:20	Pause
							:40	Agitate
	Pause		:10		:10		:10	Pause
	Spin		2:00		1:00		:40	Spin
	Spin/Spray	C	:45	C	:45	C	:45	Spin/Spray
	Spin		1:30		1:30		1:30	Spin
	Optional Extra Rinse							
RINSE	Rinse Fill	C	Variable	C	Variable	C	Variable	
	Rinse Agitate		2:00		2:00		:20	Pause
							:40	Agitate
							:20	Pause
							:40	Agitate
	Pause		:10		:10		:10	Pause
	Spin		2:00		2:00		1:30	Spin
	Regular Rinse							
RINSE	Rinse Fill	W,LW,C	Variable	C	Variable	C	Variable	
	Rinse Agitate	see note	2-6 by 1		2-6 by 1		:20	Pause
							:40	Agitate
							:20	Pause
							:40	Agitate
	Pause		:10		:10		:10	Pause
SPIN	Final Spin		5-10 by 1		5-10 by 1		5:00	Final Spin

C = COLD, W = WARM, LW = LUKEWARM
NOTE: IF WASH FILL WAS COLD, RINSE FILL WILL BE COLD

APPROXIMATE TOTAL TIMES (LESS FILLS)

		NORMAL	PERM PRESS	DELICATE
WITHOUT EXTRA RINSE	MIN	18:35	17:35	15:15
	MAX	35:35	34:35	
WITH EXTRA RINSE	MIN	22:45	21:45	18:55
	MAX	39:45	38:45	

VEND PRICE

The required vend (price to start) can be programmed from five to 995 in increments of five; initially starting at 10 for single and dual coin drop systems. When charging extra for hot wash, there are two vend settings, one, cold or warm wash fill ("basic"); and two, hot wash fill. When charging extra for hot wash, the wash fill will be hot only when the WASH TEMPERATURE switch is set to hot and the required hot wash vend has been reached. The wash fill will be warm if the WASH TEMPERATURE switch is set to hot but only the "basic" start vend has been input. The wash fill will start immediately when this "basic" vend is input and will automatically switch to hot once the total vend for hot wash has been input.

A coin slide does not have a programmable vend price. By default, a single input on input line number one will start the washer.

When charging extra for hot wash in coin slide applications, the slide must provide an input on line number one and number two.

UNBALANCED LIGHT

The control will turn on the UNBALANCED light signifying an out- of-balance condition whenever the loading door switch contact is opened during any part of a cycle while the washer is spinning. The light will turn off when the lid switch is reclosed. Breaking the switch contact during other times will only result in the washer stopping. If the loading door switch contact is open, the internal cycle timer stops until the contact is remade **except if the loading door switch contact is open after two minutes have elapsed into the final spin portion of any of the three cycles, the cycle will end and the washer will become idle, waiting for the next wash vend.**

AUDIT

The control will keep track of the number of washes and the number of times the coin switch line is activated. Input wire leads are monitored and the count kept continuously, however, a washer will **only start** if it receives **all** of the required vend after cycle completion, i.e. during the **off** period.

The programmer will display audit values up to "999" before starting back at "zero" (1000). Reading audit values has no affect on the washer operation. The audits are non-resettable. Subtract the previously read audit value from the current values to get the change in cycles or coins.

NOTE: Activating the coin switches with the programmer attached will not immediately show an increase in the audit values displayed. The programmer must first be disconnected and then reconnected in order to view any audit changes that occur with the programmer attached.

61. POWER OUTAGE OR INTERRUPTION

The control will handle power outages of any duration by restarting the cycle from where it was when power went out. Programmed cycle information and audit values remain intact.

NOTE: Power outages or the motor overload protector cycling after two minutes into the final spin of any cycle will cause the cycle to end and the washer will be idle, waiting for the next wash after the electrical power is restored.

62. PROGRAM TRANSFER

Whenever the programmer is connected to a washer, it will store **all** the programmable parameters currently in the attached washer into its own memory. This information will remain stored in the programmer for at least four minutes and possibly up to twelve hours after the programmer is removed from the washer. If during this time the programmer is attached to another washer, the values from the first washer are capable of being transferred into the second washer by pressing the PROGRAM TRANSFER pad. The display will show "Pro" for approximately one second. If any parameters were changed in the second washer (using MORE or LESS) before pressing PROGRAM TRANSFER, then pressing the pad will have no effect other than the display blanking temporarily. If the programmer has been unpowered long enough so the stored parameters are not available for transfer, pressing this pad results in the display temporarily blanking and no transfer will occur.

IMPORTANT: Do not expose the handheld programmer to severe conditions of heat or moisture. Do not store in direct sunlight.

63. HANDHELD PROGRAMMER

IMPORTANT: The handheld programmer does not have any serviceable components, therefore, it must be replaced as a complete assembly.

The programmer, Part No. 31930, is intended to interface with the control for three main functions: Auditing, Diagnostics and Programming. The programmer contains three seven segment lighted displays for communicating information to the user, *Figure 63.* The programmer has a plug connector at the end of a cable to connect with the receptacle coming from the washer control (located inside the metercase).

IMPORTANT: When connecting the plug to the receptacle, the wide flat on the top of the receptacle must line up with the wide flat side on the plug, *Figure 62.*

The programmer receives power from the washer control. When the programmer is connected, the display will show three dashes representing a "ready" state.

NOTE: If no display is visible, disconnect the handheld programmer and then reconnect it. If there still is no display, the washer may be unplugged, the motor overload protector may have cycled, or there is a power outage.

Attaching the programmer to the washer control will not affect the washer or any cycle currently in progress. Making program changes while the washer is in a cycle will cause the cycle in progress to change only for those portions of the cycle yet to come. Functions are activated and/or deactivated by pressing a switchpad once to activate and press again to deactivate. The function is completed when the "ready" state returns. The programmer will allow switching from one function to another without going back to "ready" state each time. There is one exception: you cannot go to AUDIT or PROGRAM from DIAGNOSTICS unless first returning to the "ready" state. Return to the "ready" state before disconnecting the programmer.

There is a two position key lock on the bottom end of the programmer, *Figure 63.* With the key lock turned fully **clockwise**, all functions are available, but with the lock turned **counterclockwise**, the auditing function is prevented.

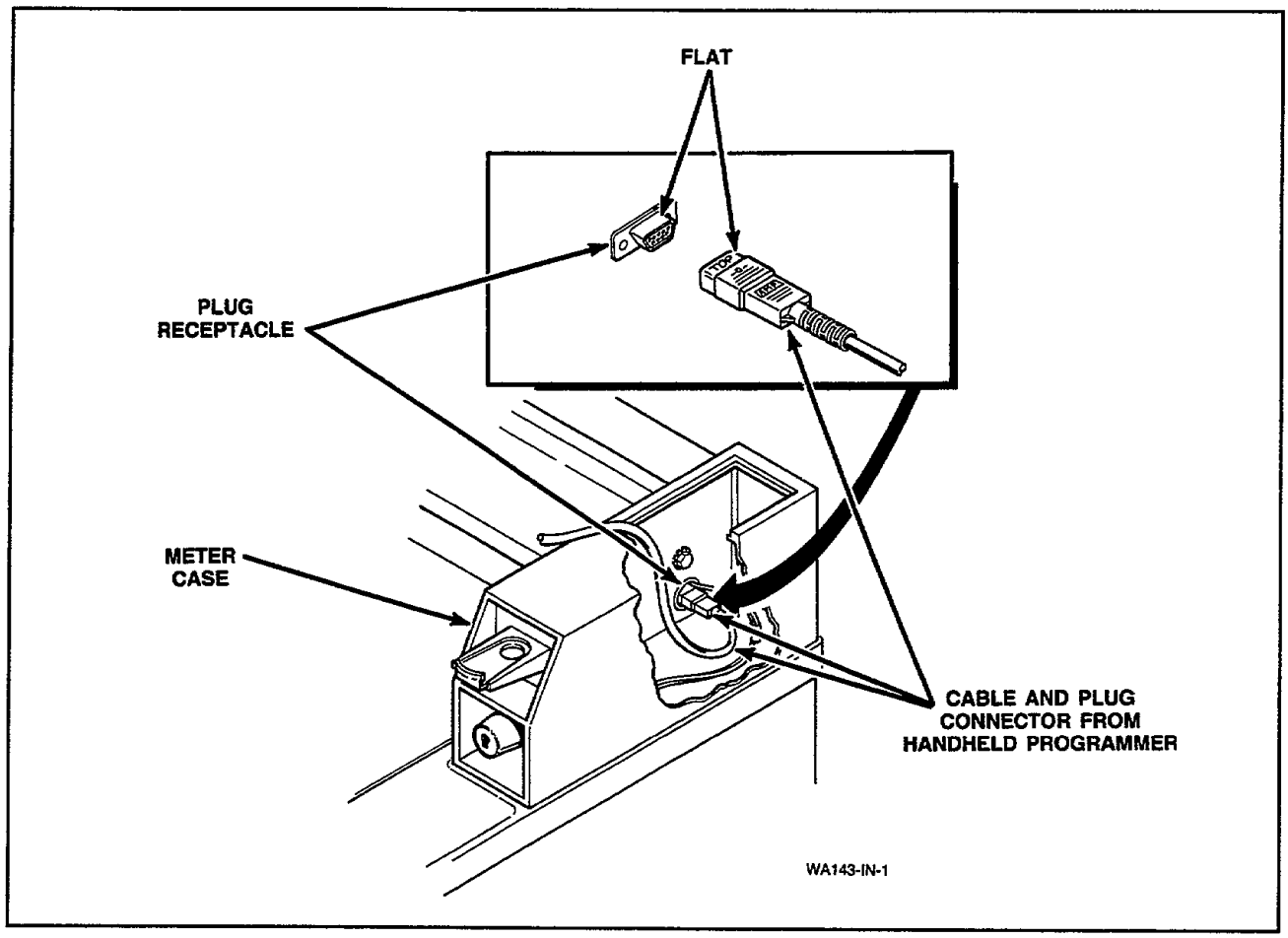


Figure 62

Pressing the WASHES switchpad the first time will display the total number of washes. Pressing the pad again will show the number of times the vend inserted matched the vend required to obtain a hot wash. If the washer is not charging extra for hot wash, the values displayed will have both increased the same amount from the last time the audit was read. Note that what is being audited is that **the vend was enough to obtain a hot wash;** whether hot water wash fill is actually selected by the user is unknown.

Pressing the COINS switch pad will display the number of coin switch closures on the control input line number one. Pressing the pad again will display the number of closures for line number two. The type of coin accepter used will determine what these numbers translate to in actual money.

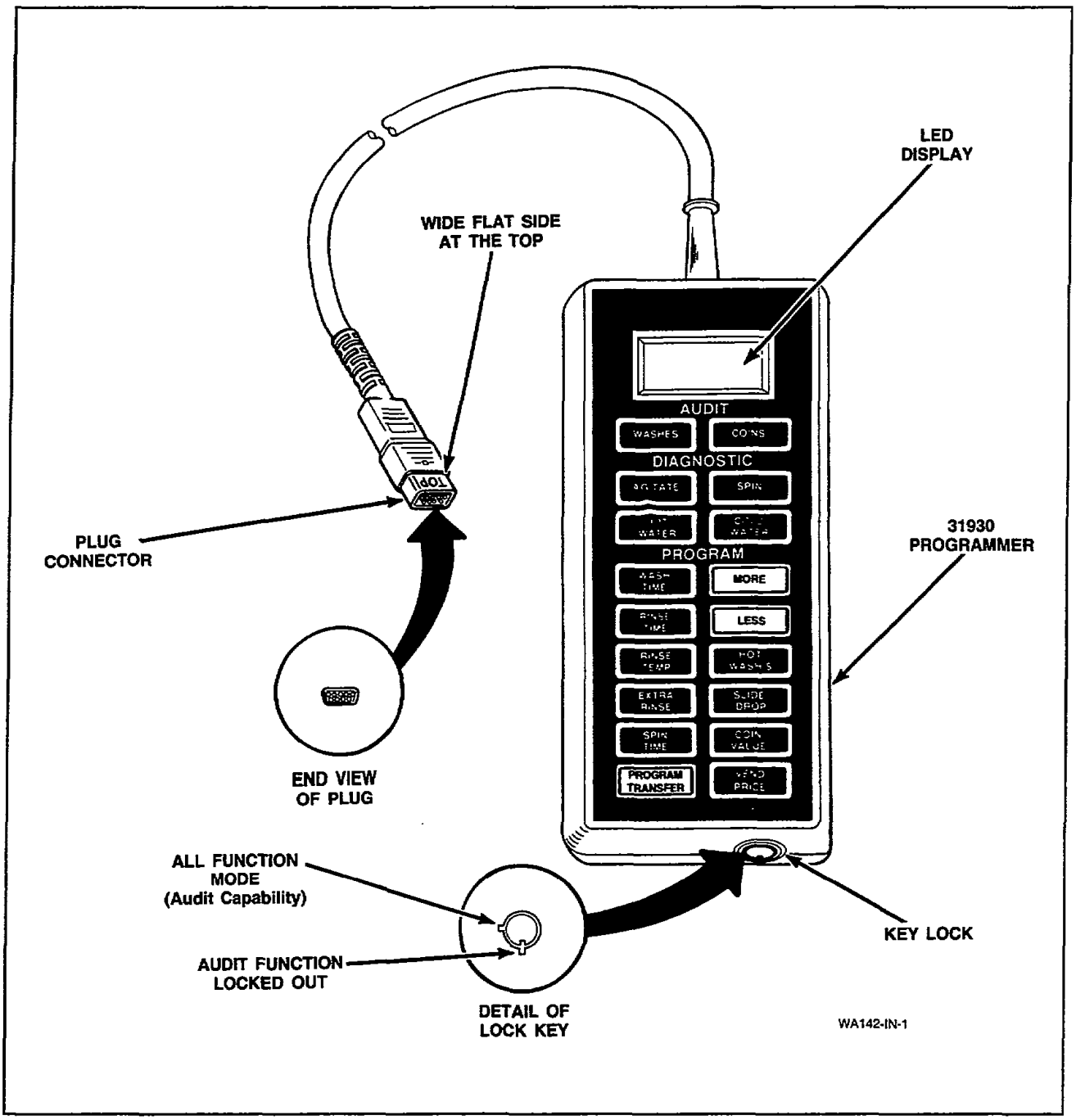


Figure 63

64. CYCLE PROGRAMMING

The program switchpads allow viewing or changing of the programmable cycle parameters. The MORE and LESS pads are used to change the value of the parameter. Numbers will increase/decrease until the maximum/minimum allowed for that function and then wrap around to the other end of the allowable range. Non-numerical functions change to the next option or toggle between "YES" and "NO". The washer control is programmed to the new value **immediately** as the MORE and LESS pads are pressed.

Pressing any of the function pads displays the value currently in the washer control for that function. The value can then be changed using the MORE and LESS pads. The WASH TIME, RINSE TIME, and SPIN TIME pads will allow viewing the programmed time for that portion of the washer cycle. The RINSE TEMP pad allows viewing the rinse temperature in the NORMAL fabric cycle. Displayed are "C" for Cold, "HC" for Warm, and "HC" with the "H" flashing for Lukewarm.

Pressing the EXTRA RINSE or the HOT WASH $ pads shows if the option selected as "YES" or "NO" appearing on the display. Pressing the SLIDE/DROP pad displays what coin accepter the washer is programmed for. The displays are "SL" for slide, "dP1" for single coin drop, and "dP2" for dual coin drop.

Pressing the COIN VALUE pad displays the coin value(s) programmed for single and dual coin drops. For single drops only one value is possible; for dual drops, the first time the pad is pressed shows coin value of input line number one and the second time shows value for input line number two.

NOTE: The COIN VALUE pad is not available for slide accepters and the display stays in the "ready" state.

Pressing the VEND PRICE pad displays the **total** price to start the washer when using drop type accepters. If charging extra for a hot wash, two values are possible, one, press the pad once to view the charge for a warm or cold wash ("Basic"); or two, press the pad twice to view the charge for a hot wash.

NOTE: VEND PRICE is unavailable for slides and the control stays in the "ready" state.

65. COIN ACCEPTOR

The washer can use a coin slide, single coin drop or dual coin drop as a coin acceptor. The washer will connect to a switch(s) in the metercase to be activated by a coin slide or coin drop. The control input lead wires (located in the meter case) are called number one, number two, and common. Input lines are activated by closure of a normally open coin switch.

TO WIRE A COIN ACCEPTOR

⚠ WARNING

To reduce the risk of an electric shock, disconnect the power cord before servicing the washer. Never energize the electrical power to the washer with any of the panels removed.

1. Input line number one (BLACK/YELLOW wire) connects to N.O. (normally open) terminal of the coin switch on a coin slide, single coin drop or one switch on a dual coin drop.

2. Input line number two (ORANGE/BLUE wire) connects to N.O. (normally open) terminal of the extra hot charge switch on a special coin slide, or to the other (second) coin switch on a dual coin drop.

NOTE: When not charging extra for hot wash and using the coin slide start kit, No. 457P3, the ORANGE/BLUE wire will remain unused within the meter case. Loop the end of this wire back onto itself and tape to prevent the end of the wire from making contact with the meter case.

3. The common line (GRAY/YELLOW wire) connects to the COM. (common) terminal on all switches.

66. LOADING DOOR SWITCH

Loading door MUST be CLOSED any time the washer is to fill, agitate or spin.

⚠ WARNING

To reduce the risk of bodily injury, DO NOT by-pass the loading door switch by permitting the washer to agitate or spin with the loading door open. A brake will stop the washtub within seconds if the loading door is opened during spinning. If the washtub does not stop when the loading door is opened, remove the washer from use and call the serviceman.

NOTE: WATER FILL OPTION — An option exists to allow the washer to fill with water with the loading door open. Proceed as follows:

⚠ WARNING

To reduce the risk of an electric shock, disconnect the electrical power to the washer before attempting to service.

1. Remove the two control panel attaching screws and lift the assembly up and out of the slots in the cabinet top.

2. Lay the control panel (face down) on protective padding on top of the washer.

3. Disconnect the PINK/BLUE wire from terminal number one on the pressure switch.

4. Locate the loose BLACK wire in the harness with the plastic insulator on the end of it.

5. Remove the plastic insulator from the BLACK wire and attach the insulator to the end of the PINK/BLUE wire removed in step three.

6. Connect the BLACK wire from step 4 to terminal number one on the pressure switch.

7. Reinstall the control panel and reconnect the electrical power to the washer.

8. Run the washer through a cycle to make sure the water continues to fill when the loading door is opened. Agitation or spinning should not occur with the loading door open.

67. TROUBLESHOOTING ELECTRONIC CONTROL

IMPORTANT: The procedure is intended to be used as an aid in diagnosing potential problems with the electronic control. Refer to the SERVICE HELPS, SECTION V, for diagnosing problems with components other than the electronic control. See *Figure 64* for connections, terminal numbers and color coding.

DIAGNOSTIC MODE

The diagnostics mode can be entered via the keypad of the handheld programmer. Used in conjunction with other tools by a trained service person. The diagnostics routine will reduce the amount of time required to locate and service the most common problems of the washer.

Refer to the flow charts on the following pages which corresponds to the apparent problem or symptom. Verify proper wiring as shown on the CONNECTION DIAGRAM of the appropriate wiring diagram, SECTION X.

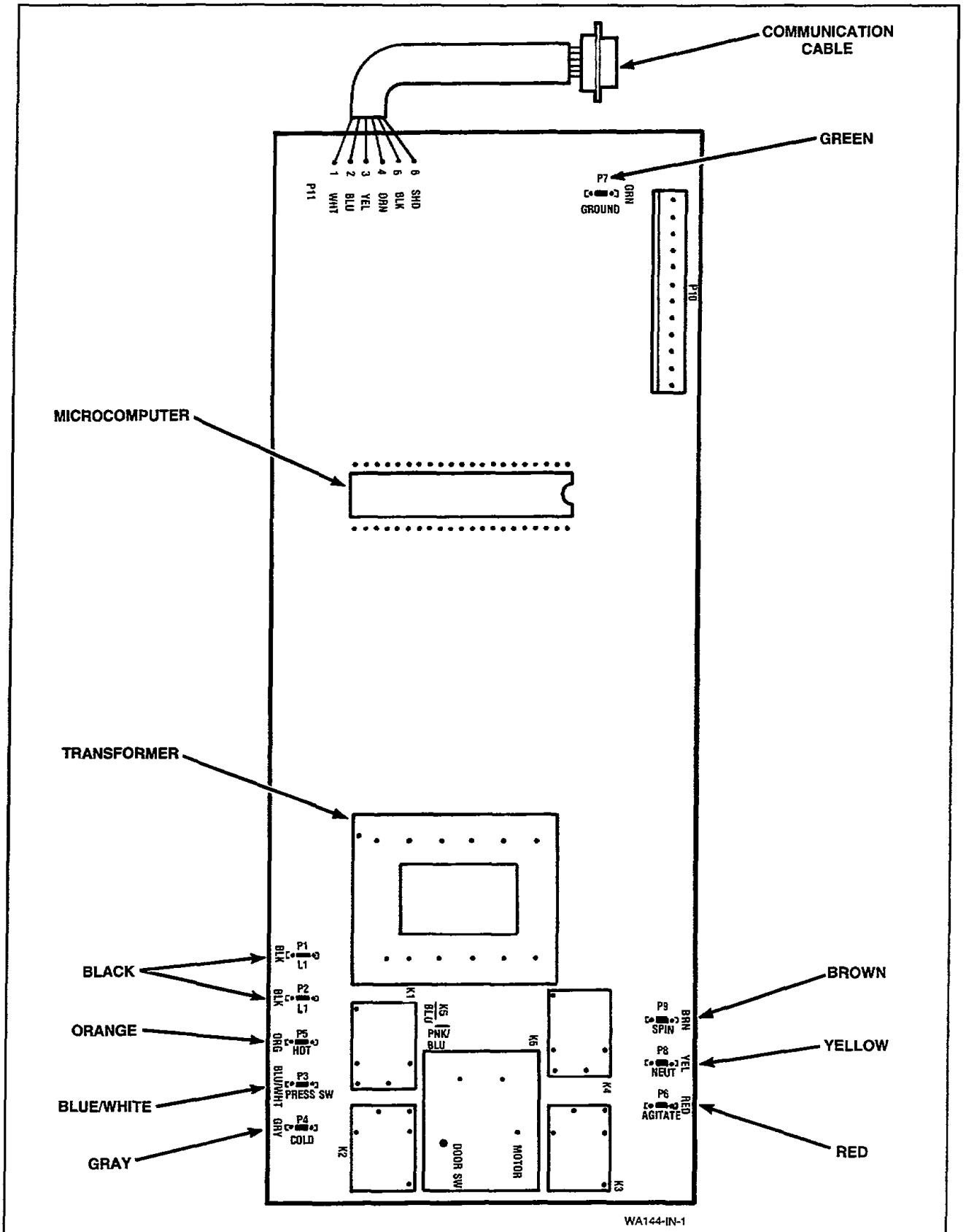
⚠WARNING

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.

OPERATION

Pressing any of the DIAGNOSTIC switchpads will cancel the washer cycle in progress. Pressing AGITATE will cause the washer to go into agitation and the WASH and RINSE status lights to light; an "A" will be displayed. Pressing SPIN will cause the washer to spin and the SPIN and UNBALANCED lights to light; and "S" will be displayed. Whenever switching the motor on or off, or switching between AGITATE/SPIN, there is a required five second pause to prevent damage to the washer components. The motor will stop; the display will either go into the "ready" state requiring the appropriate action switchpad to be pressed **after five seconds,** or the "A" or "S" will be displayed but the washer will pause five seconds before starting. Pressing either HOT WATER or COLD WATER will cause the proper mixing valve solenoid to operate individually or together; "H" and "C" are displayed respectively. Water valve operation is also possible while in either motor action. The solenoids themselves will only operate until the washer's pressure switch has been satisfied. Pressing the switchpad for an active diagnostic function will turn it off, and if no functions are then active the programmer will be in the "ready" state. Opening the loading door while in DIAGNOSTICS and the programmer attached temporarily stops all functions until the loading door is closed. If the programmer is removed during any function, the function continues until electrical power is disconnected from the washer or the programmer is reattached, which will cancel all diagnostics.

IMPORTANT: It is not recommended to operate the washer for extended periods of time in a single diagnostic mode, premature life and overheating may result.

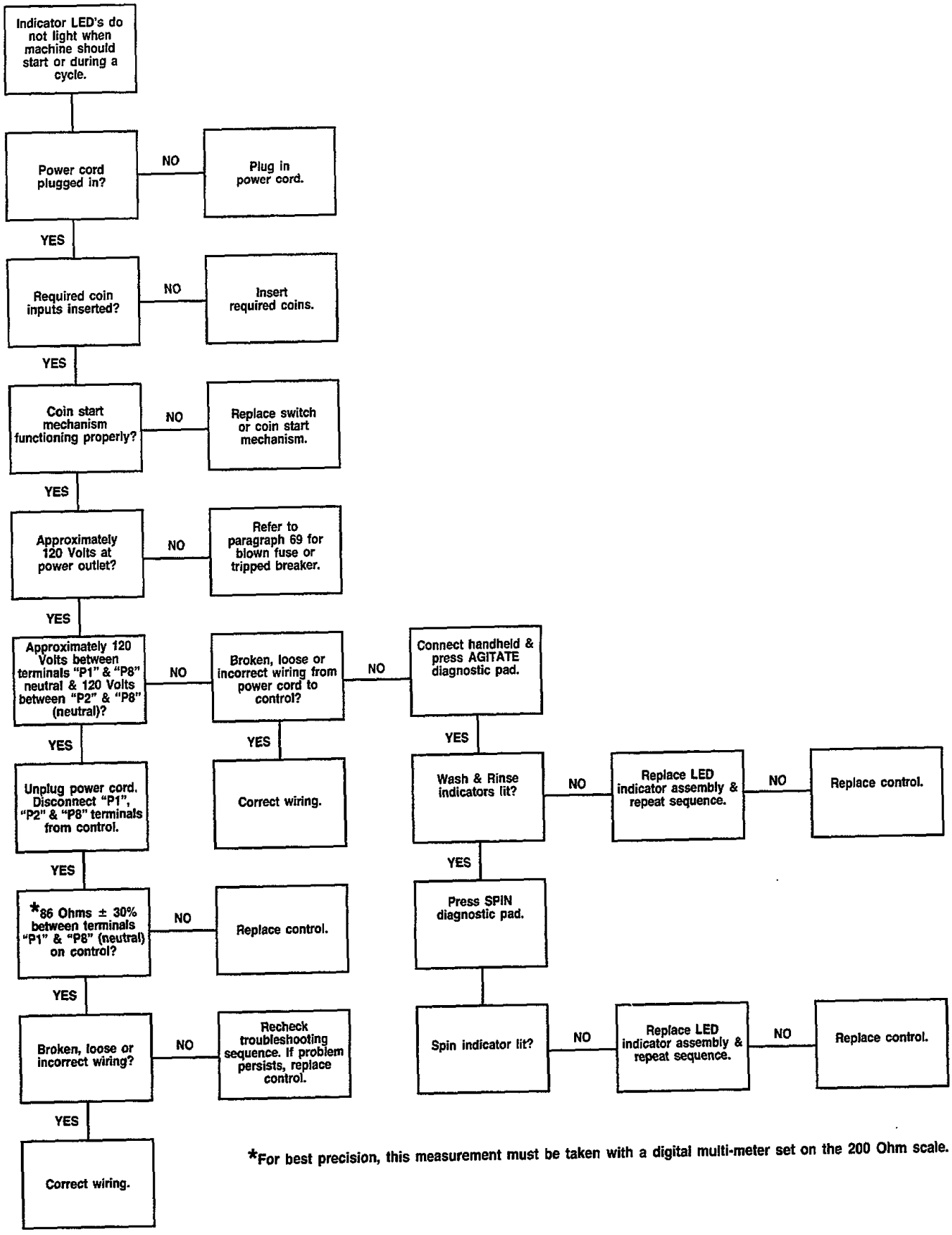


CONNECTION, RELAY AND TRANSFORMER DIAGRAM (ELECTRONIC CONTROL)

Figure 64

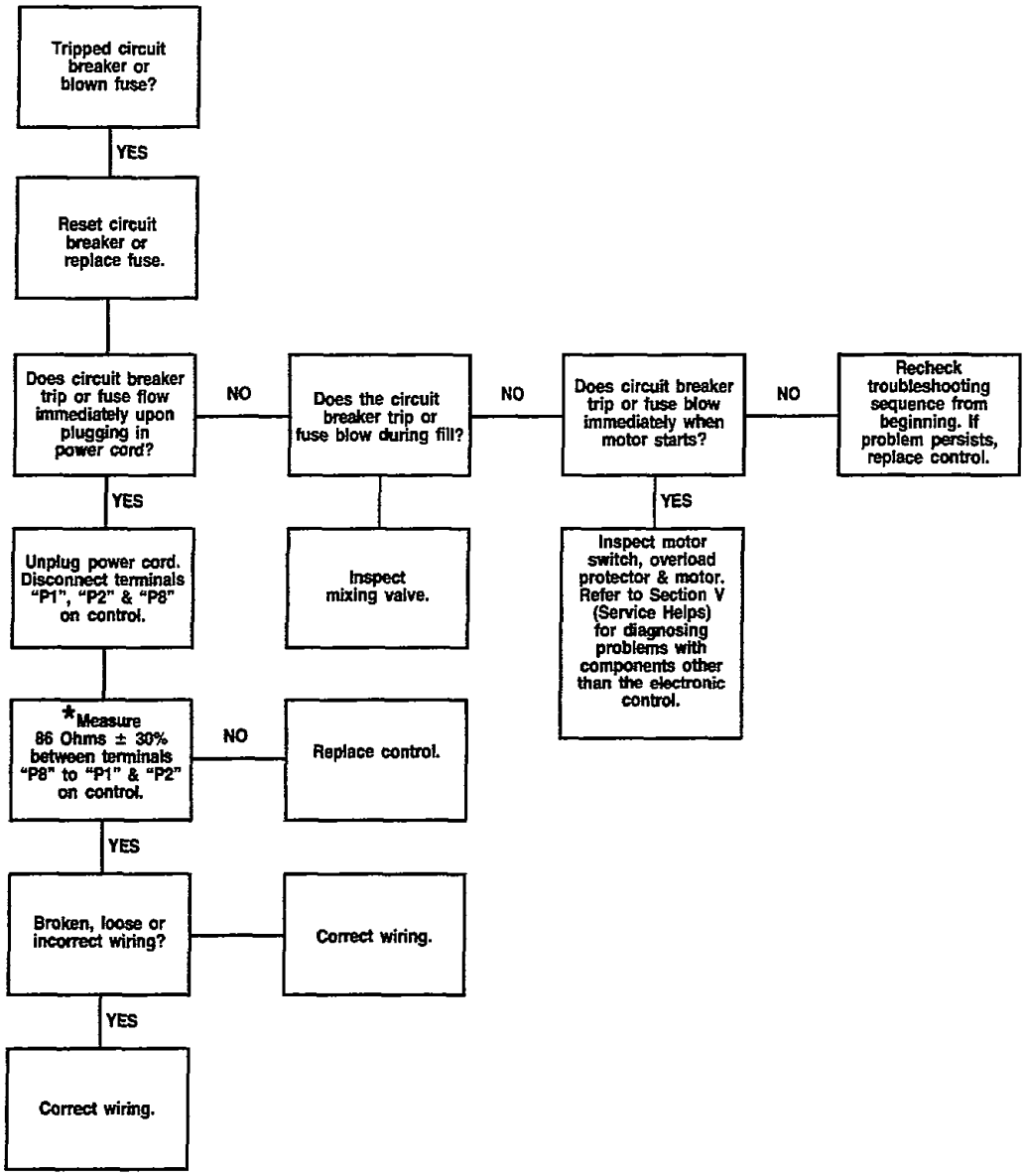
68. **SYMPTOM:** Indicator LED's (i.e. Wash, Rinse, Spin, Unbalanced) Do Not Light.

NOTE: See Cycle Chart Page 99 for status light sequence.



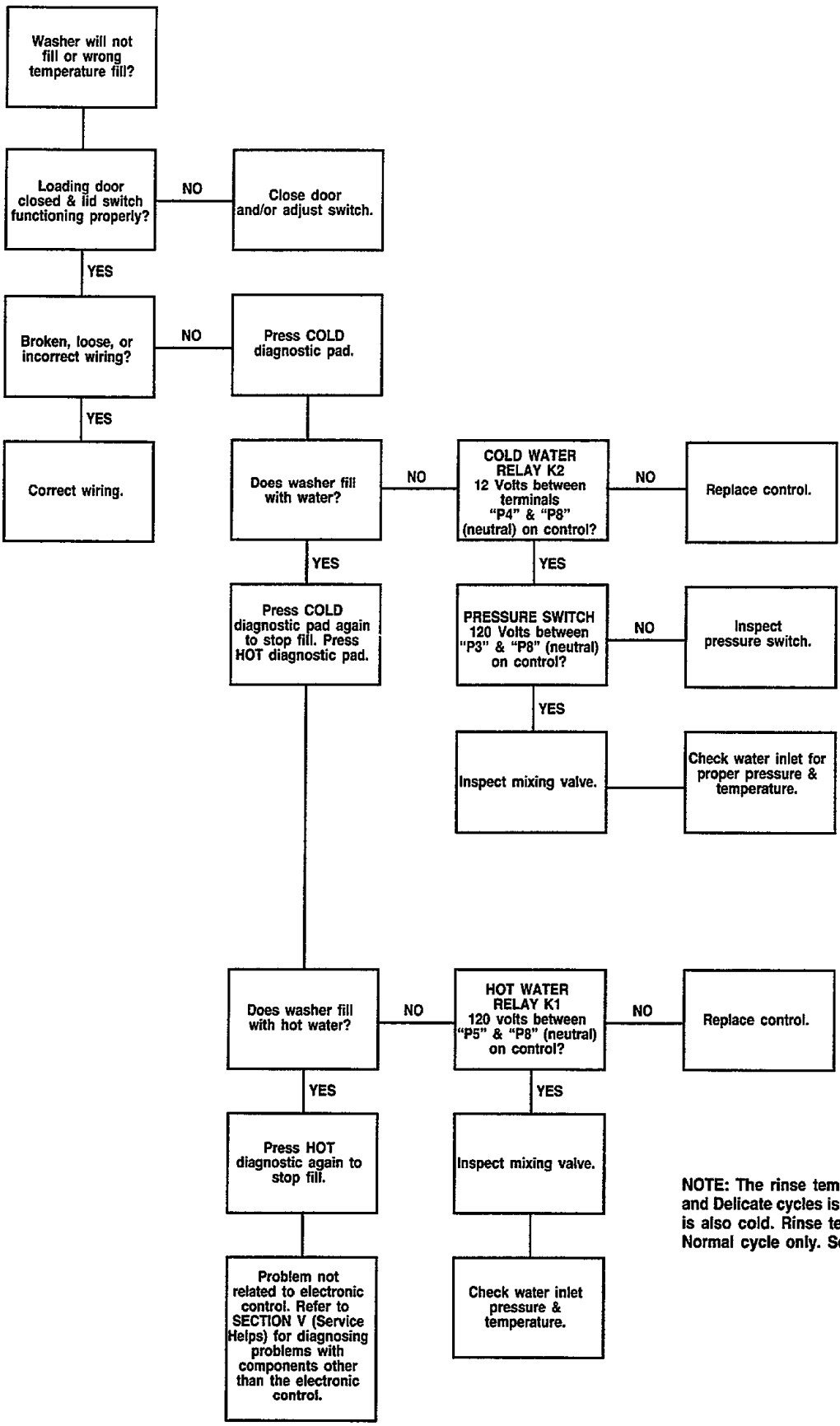
*For best precision, this measurement must be taken with a digital multi-meter set on the 200 Ohm scale.

69. **SYMPTOM:** Tripped Circuit Breaker or Blown Fuse.



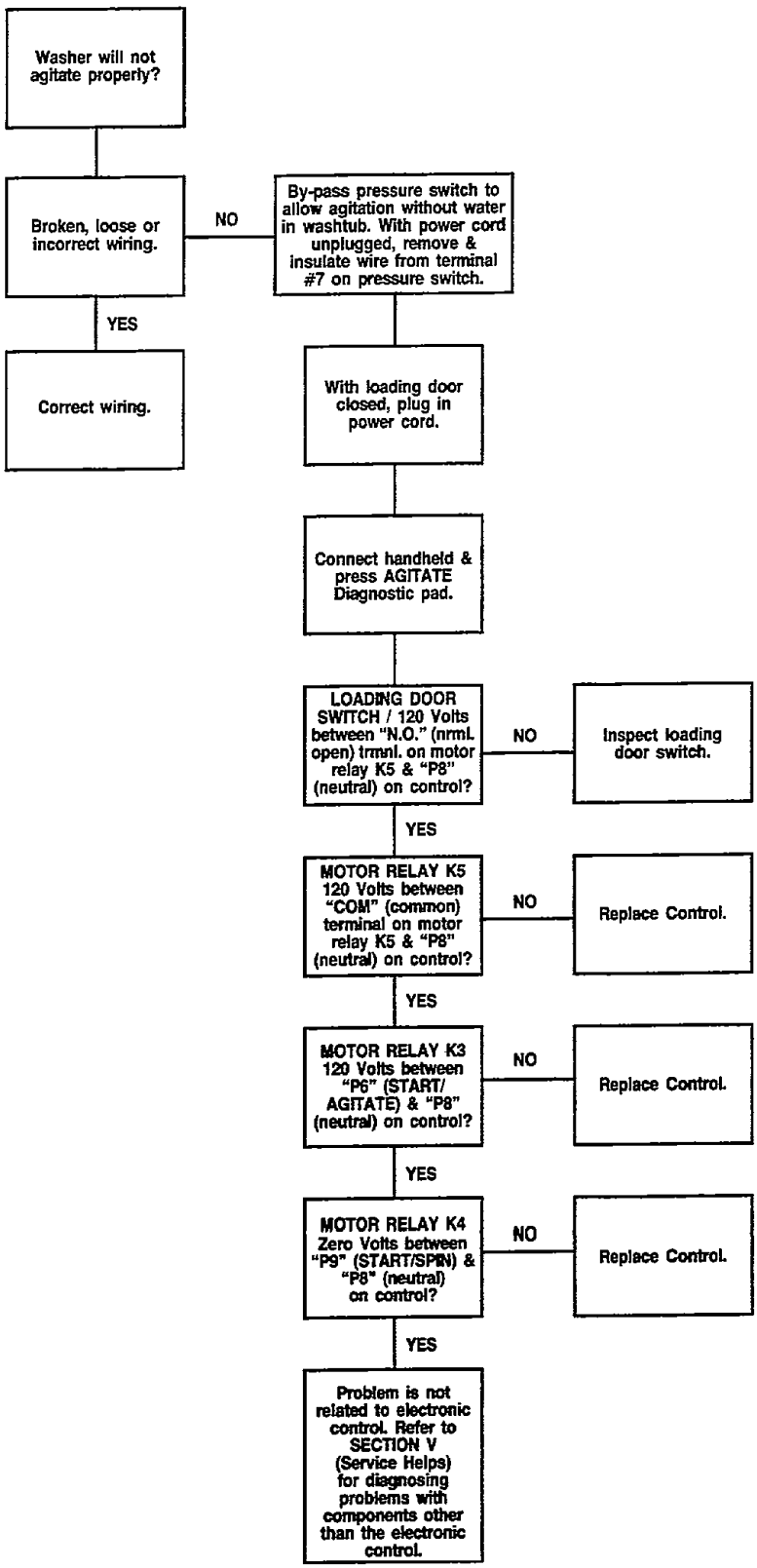
*For best precision, this measurement must be taken with a digital multi-meter set on the 200 Ohm scale.

70. SYMPTOM: Washer Will Not Fill or Wrong Temperature Fill.

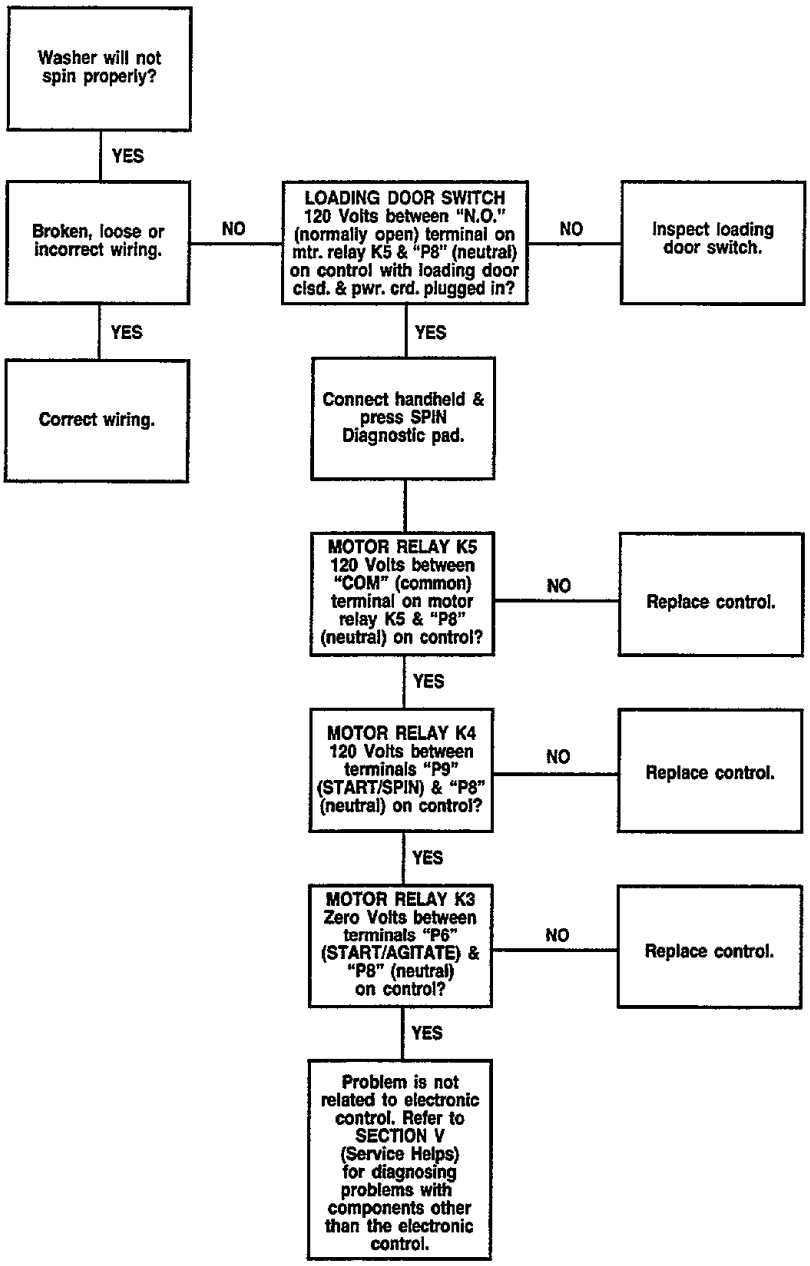


NOTE: The rinse temperature for Permanent Press and Delicate cycles is always cold. The extra rinse is also cold. Rinse temperature is variable for Normal cycle only. See Cycle Chart Page 99.

71. SYMPTOM: Washer Will Not Agitate Properly.



72. **SYMPTOM:** Washer Will Not Spin Properly.



73. CONTROL REPLACEMENT

When a problem with the electronic control is suspected after performing the electrical tests discussed in the trouble-shooting guide, the control should be replaced. Due to the sensitivity of the electronic control, careful handling is required. As a precautionary measure, the use of a grounded wrist strap when handling the control is recommended. The wrist strap, cord and alligator clip are designed to carry away any electrostatic charge from your body and 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.

⚠WARNING

To reduce the risk of an electric shock, disconnect the electrical power to the washer before attempting to service.

To replace the control, first unplug the washer. Remove all of the wires connected to the control and remove the attaching hardware from control bracket securing assembly to washer. 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 foam carton. While holding the metal edges, remove the control from the foam wrapping. Place the inoperative control on the foam. Before positioning the new control in the control hood, remove the pressure switch from the old assembly and mount on the control bracket. When installing the complete control assembly, insert the mounting tab in the appropriate hole and securely fasten with mounting hardware. Following the wiring diagram, reconnect the wires to the new control. **Do not press on electronic components or bend the terminals on the control.**

It is important to take care when handling the original control. It must be carefully placed in the anti-static foam carton. A copy of the replacement report, shown on Page 113, must be completely filled out and returned with the control. Warranty credit will be issued only if the control is handled and packaged properly.

Electronic Control Board Replacement Report

Installation Date: _____ Date Failed: _____

Model No.: _____ Serial No.: _____

1. What was the 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 (320-480 ohms for 230V models) range between P1 and P8?

Hot water Relay K1:
☐ 120 Volts* not found between P5 and P8 in hot fill?

Cold Water Relay K2:
☐ 120 volts* not found between P4 and P8 in cold fill?

Main Motor Relay K5:
☐ 120 volts* not found between "Com" and P8 in agitation?

☐ 120 volts* not found between "Com" and P8 in spin?

Agitation Relay K3:
☐ 120 volts* not found between P6 and P8 in agitation?

☐ 120 volts* found between P6 and P8 in spin?

Spin Relay K4:
☐ 120 volts* not found between P9 and P8 during spin?

☐ 120 volts* found between P9 and P8 during agitation?

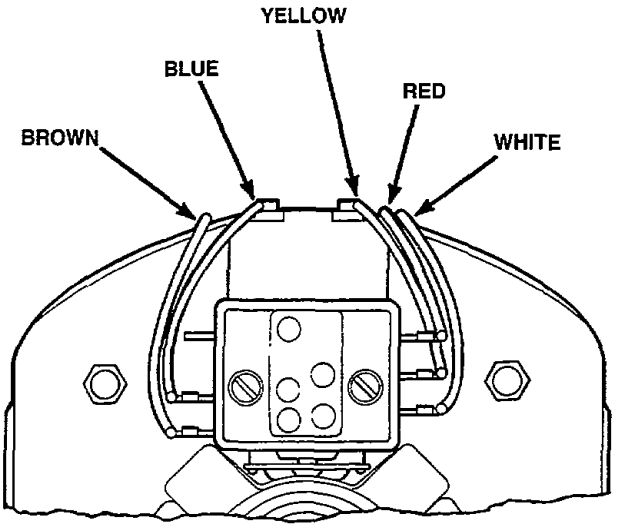
*If washer is 230 volts, you should read 230 Volts not 120 volts.

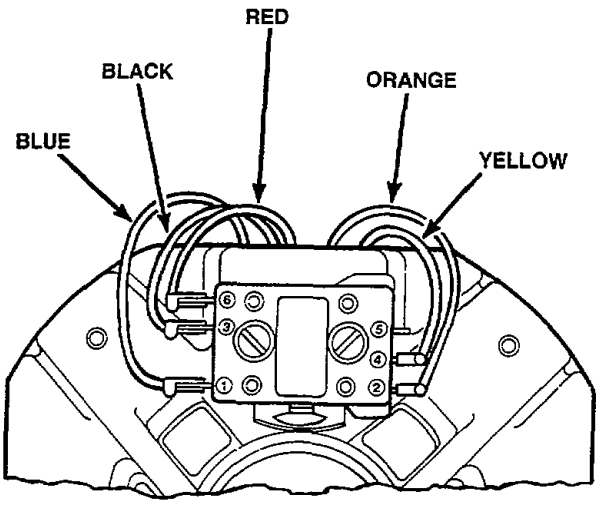
Additional Comments:

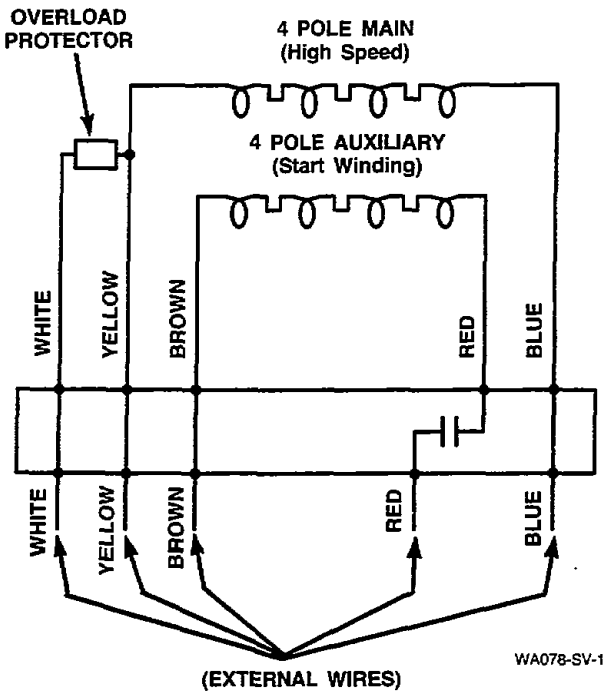
Both copies of this form must be completed and returned with the control board.
Warranty is void if control board is returned improperly packed or damaged.

Form No. 8027R1

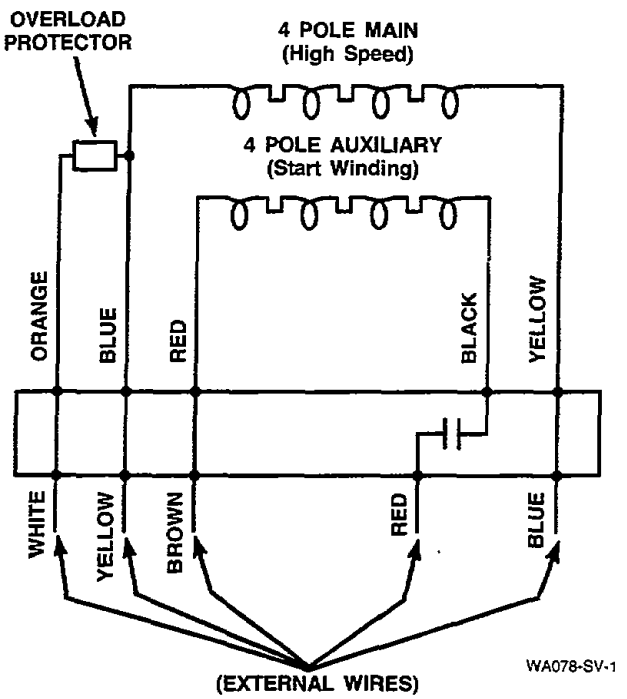
SECTION VIII
Internal Wiring of The Washer Motor Switches





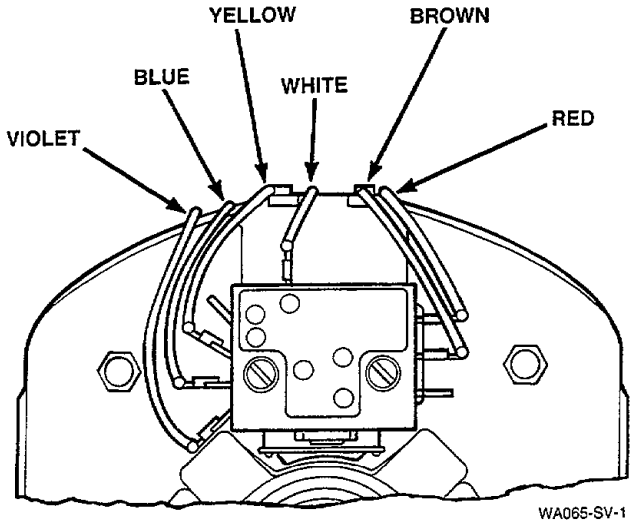


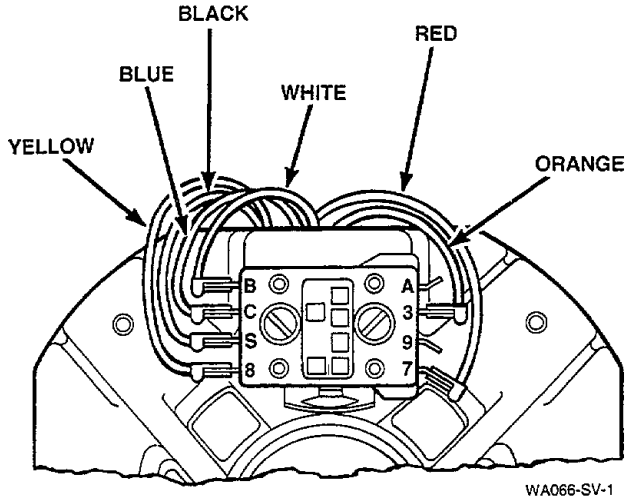
30897 Motor
(Emerson)

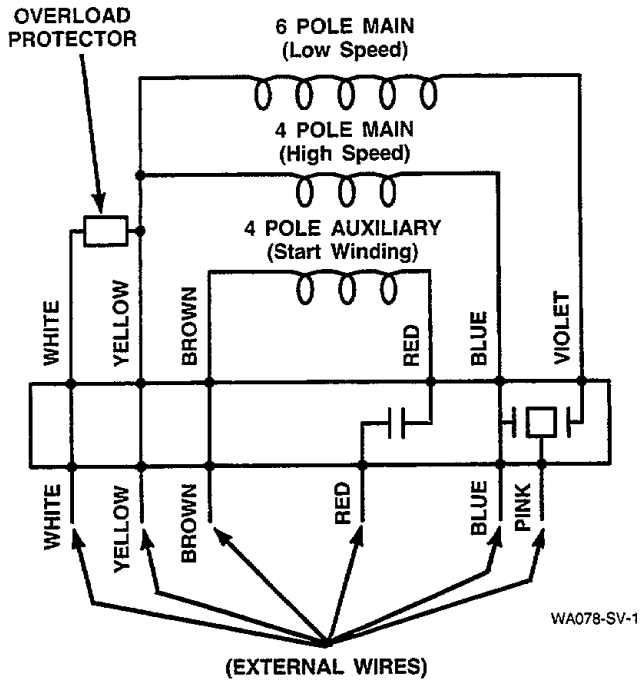


30897 Motor
(General Electric)

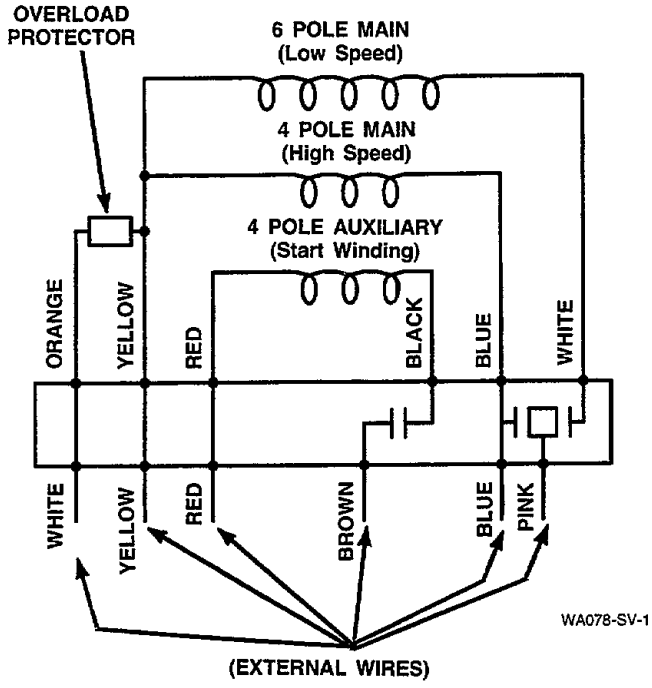
27658 Motor Assembly (1 Speed Motors)







30895 Motor
(General Electric)



30895 Motor
(Emerson)

27179 Motor Assembly (2 Speed Motors)