Parts and Service Manual for Home Laundry Automatic Washers

(KA Models)

Part No. 33600
5/90

⚠ 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.

⚠ WARNING

Do not repair or replace any part of the washer, or attempt any service unless specifically recommended or published in the Parts and Service Manual that you understand and have the skills to carry out.

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 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.

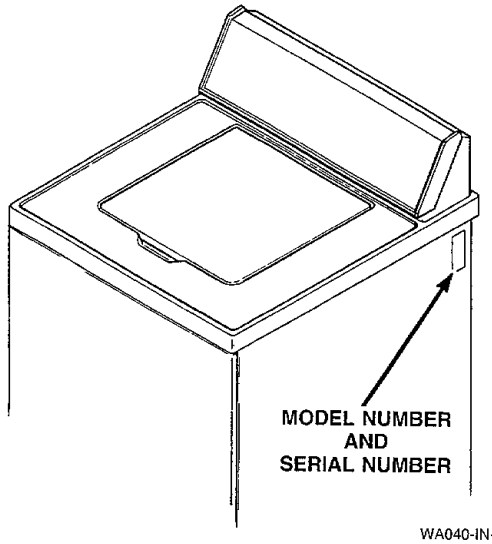
⚠ WARNING

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.

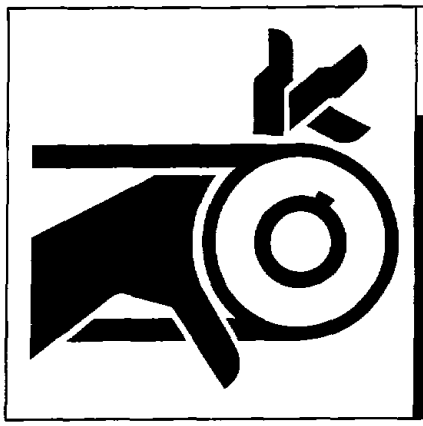
Nameplate Location

IMPORTANT

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



WA040-IN-1



⚠ WARNING

- **Never operate the washer with the front panel removed!**
- **DO NOT operate the washer with missing or broken parts!**
- **DO NOT BY-PASS ANY SAFETY DEVICES!**

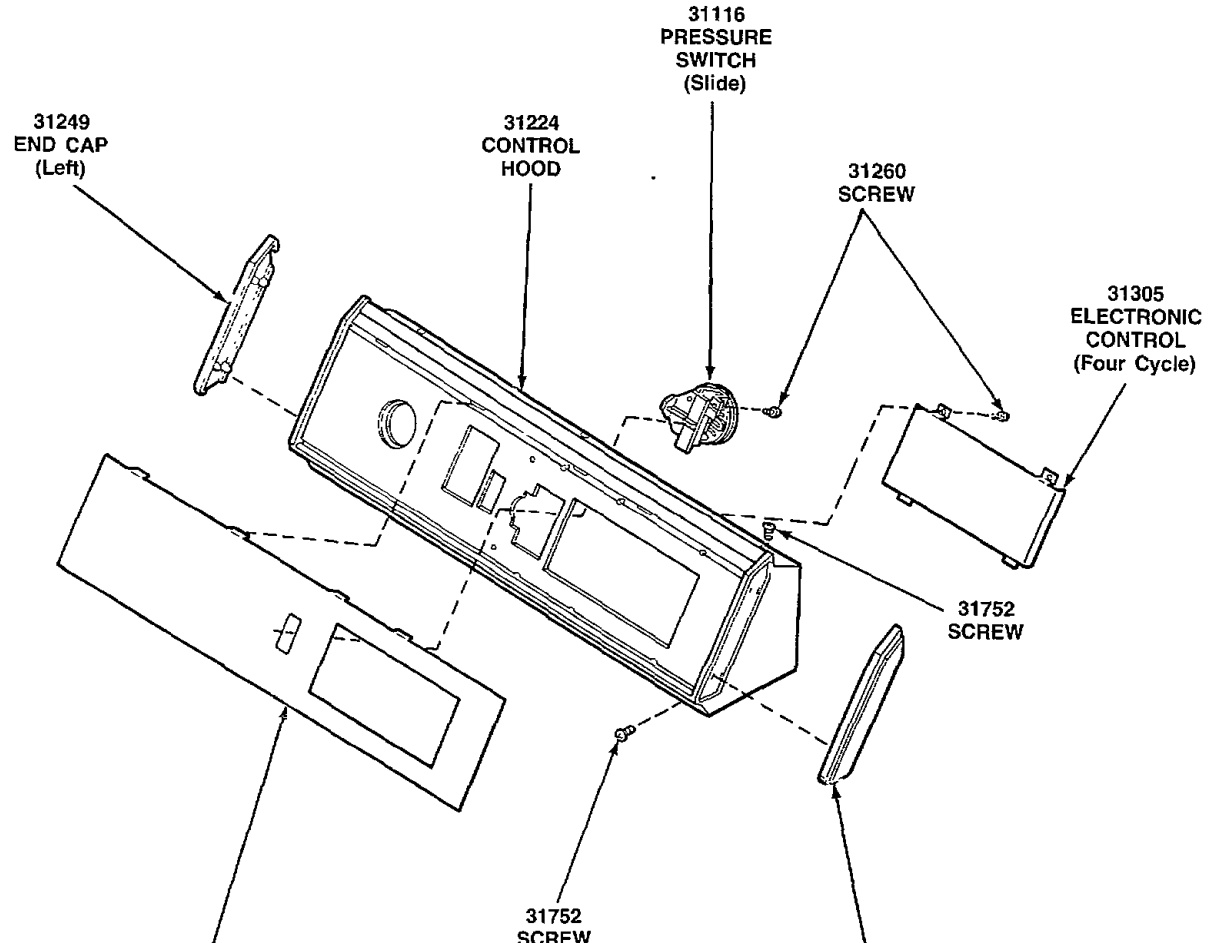
Table of Contents

SECTION IV ADJUSTMENTS

SECTION V SERVICE HELPS

SECTION VII SERVICE PROCEDURES UNIQUE TO THE ELECTRONIC CONTROL MODEL WASHERS

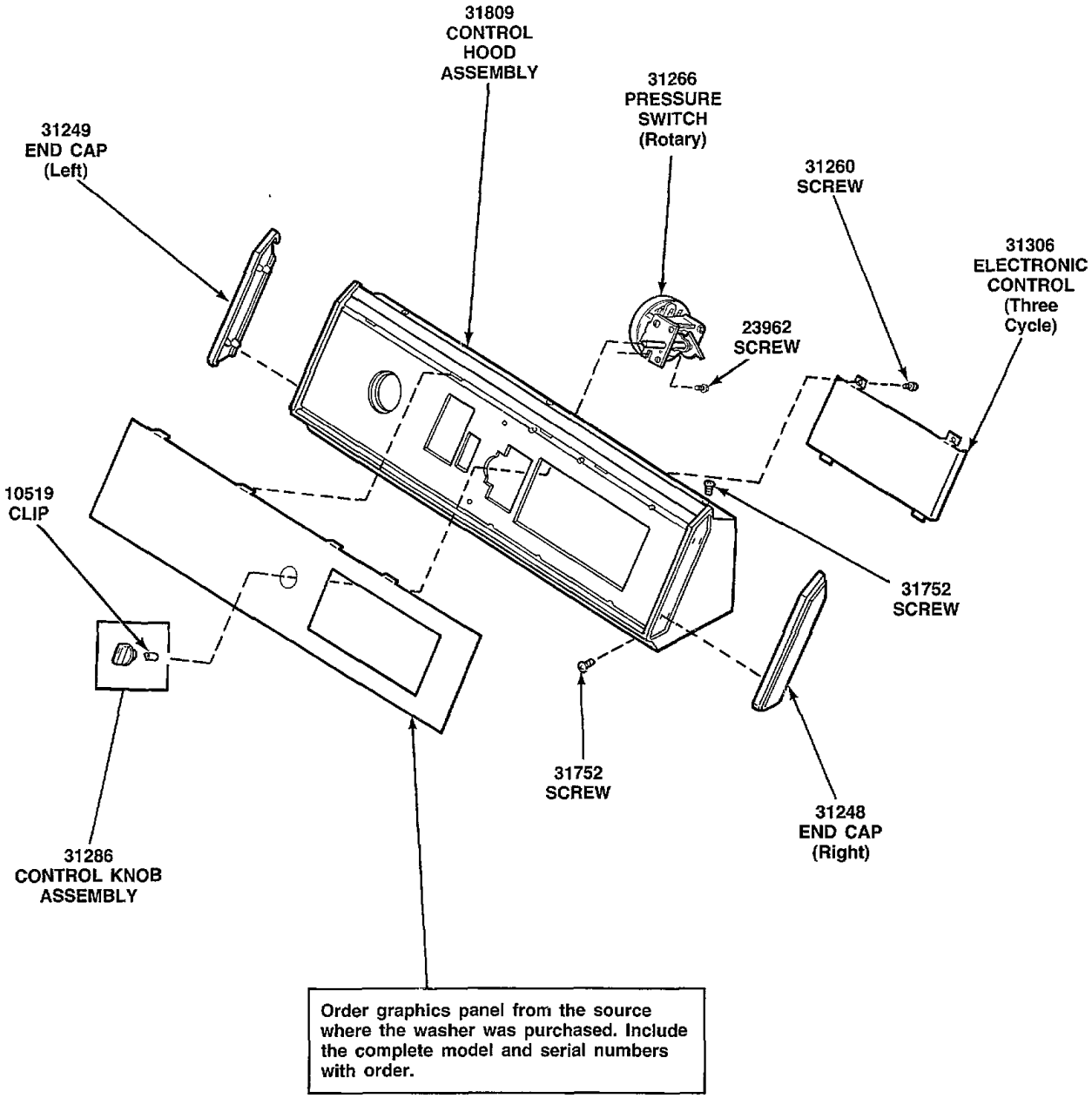
SECTION I
Parts



Order graphics panel from the source where the washer was purchased. Include the complete model and serial numbers with order.

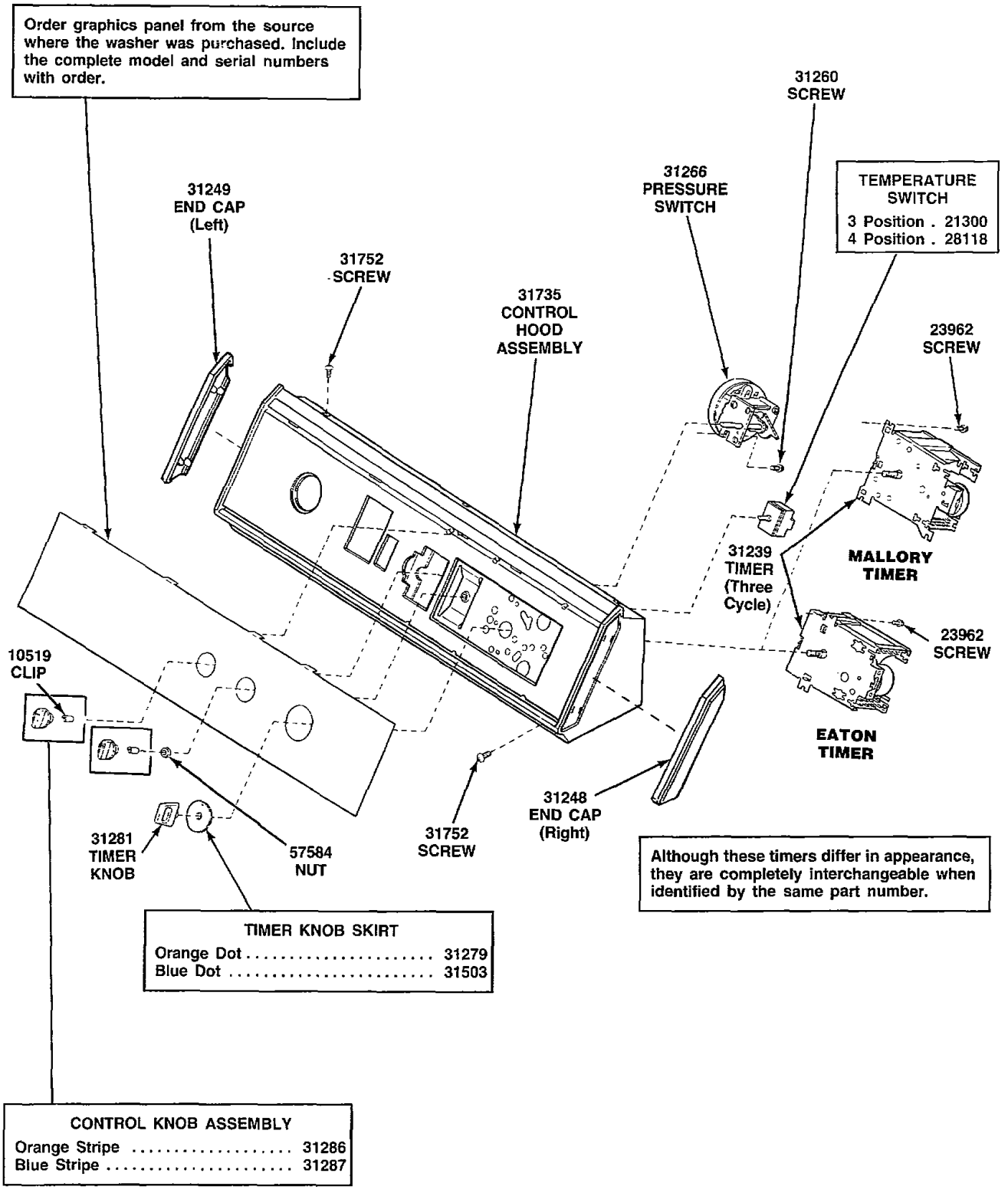
WA094-PT

GRAPHICS PANEL, CONTROL HOOD AND CONTROLS



WA095-PT

GRAPHICS PANEL, CONTROL HOOD AND CONTROLS



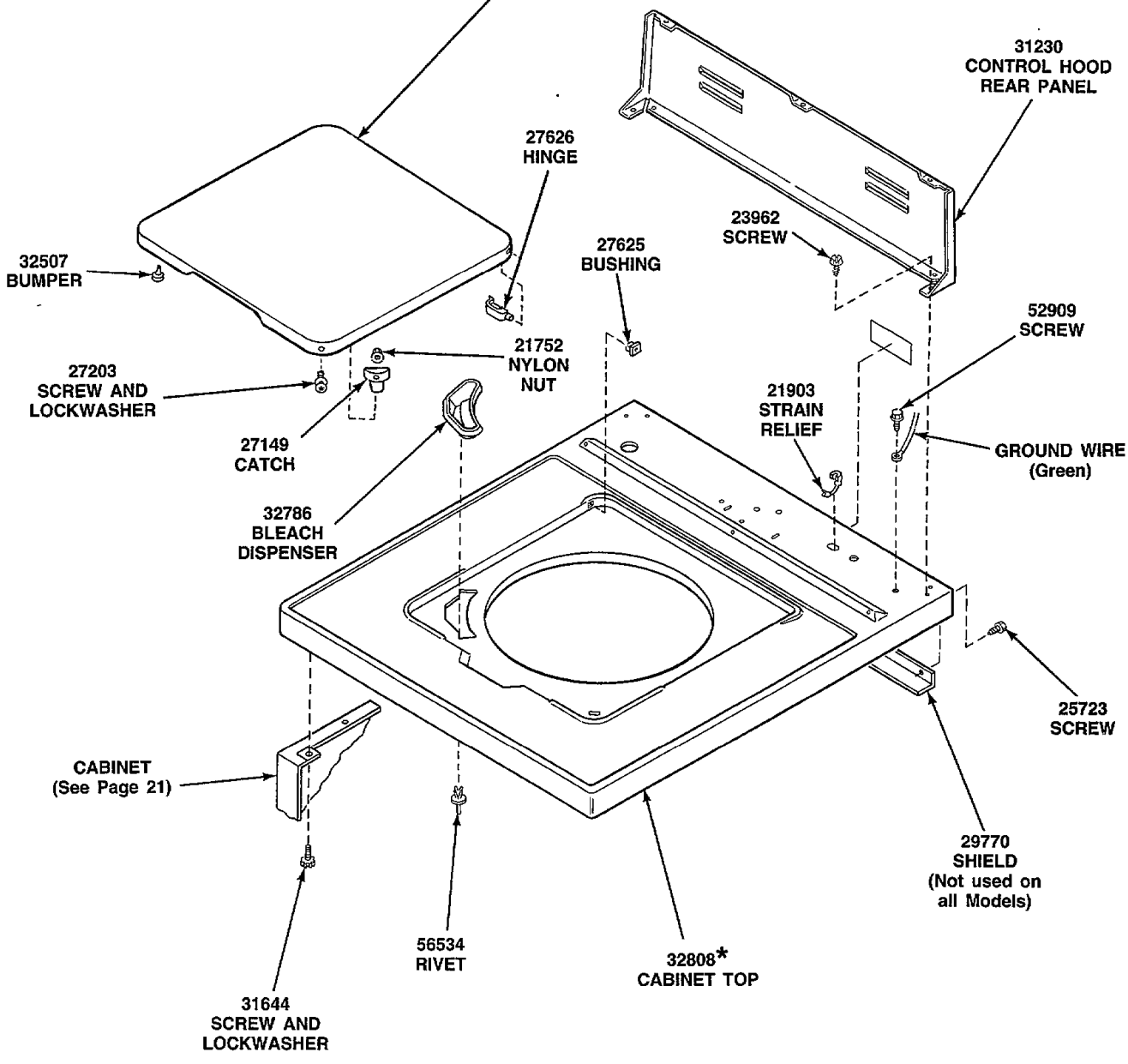
WA093-PT

GRAPHICS PANEL, CONTROL HOOD AND CONTROLS

*ADD SUFFIX LETTER TO PART NUMBER TO DESIGNATE COLOR.

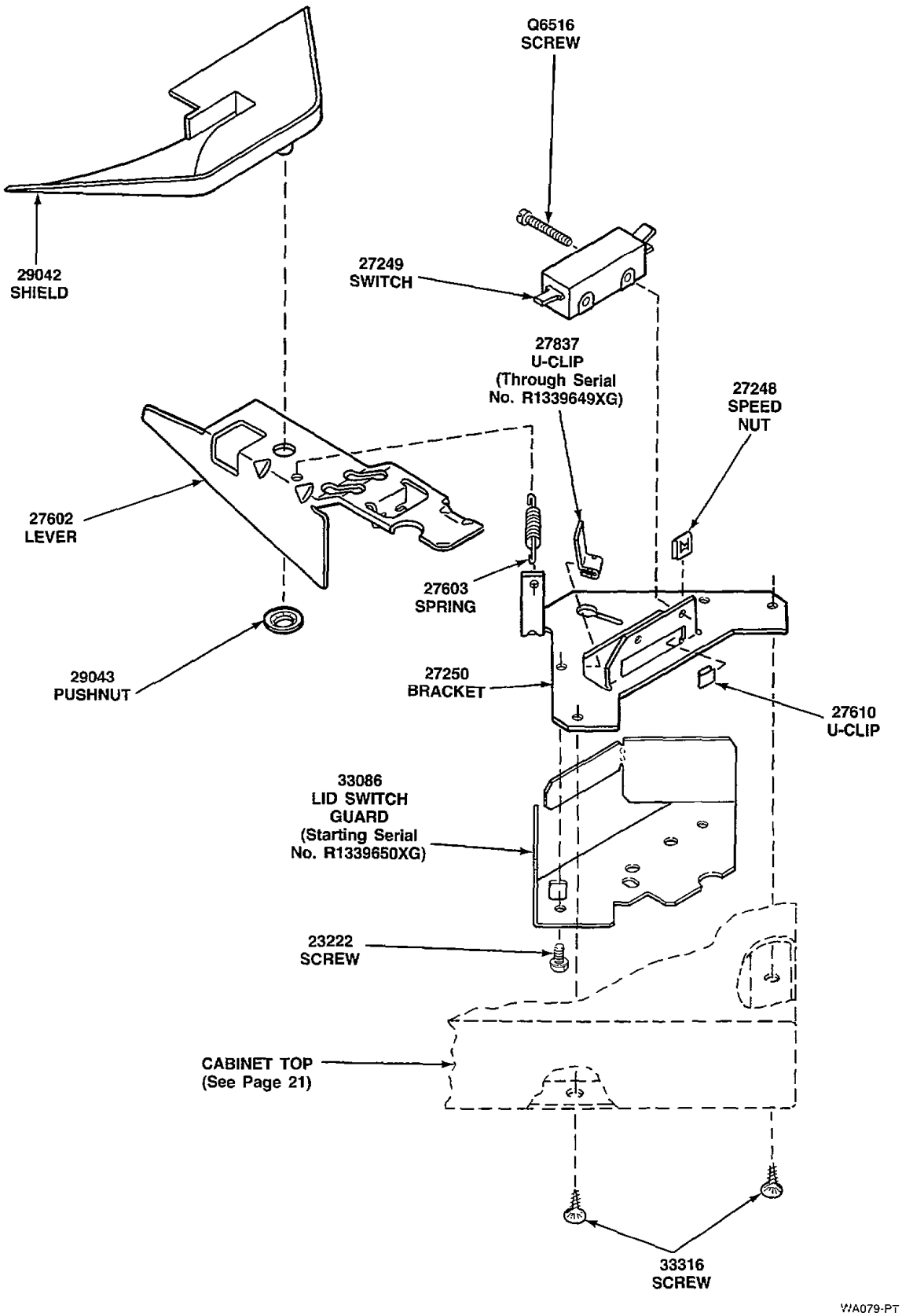
H Harvest Gold *L* Almond
W White

LOADING DOOR
Electronic Models 31314*
Timer Models 31315*

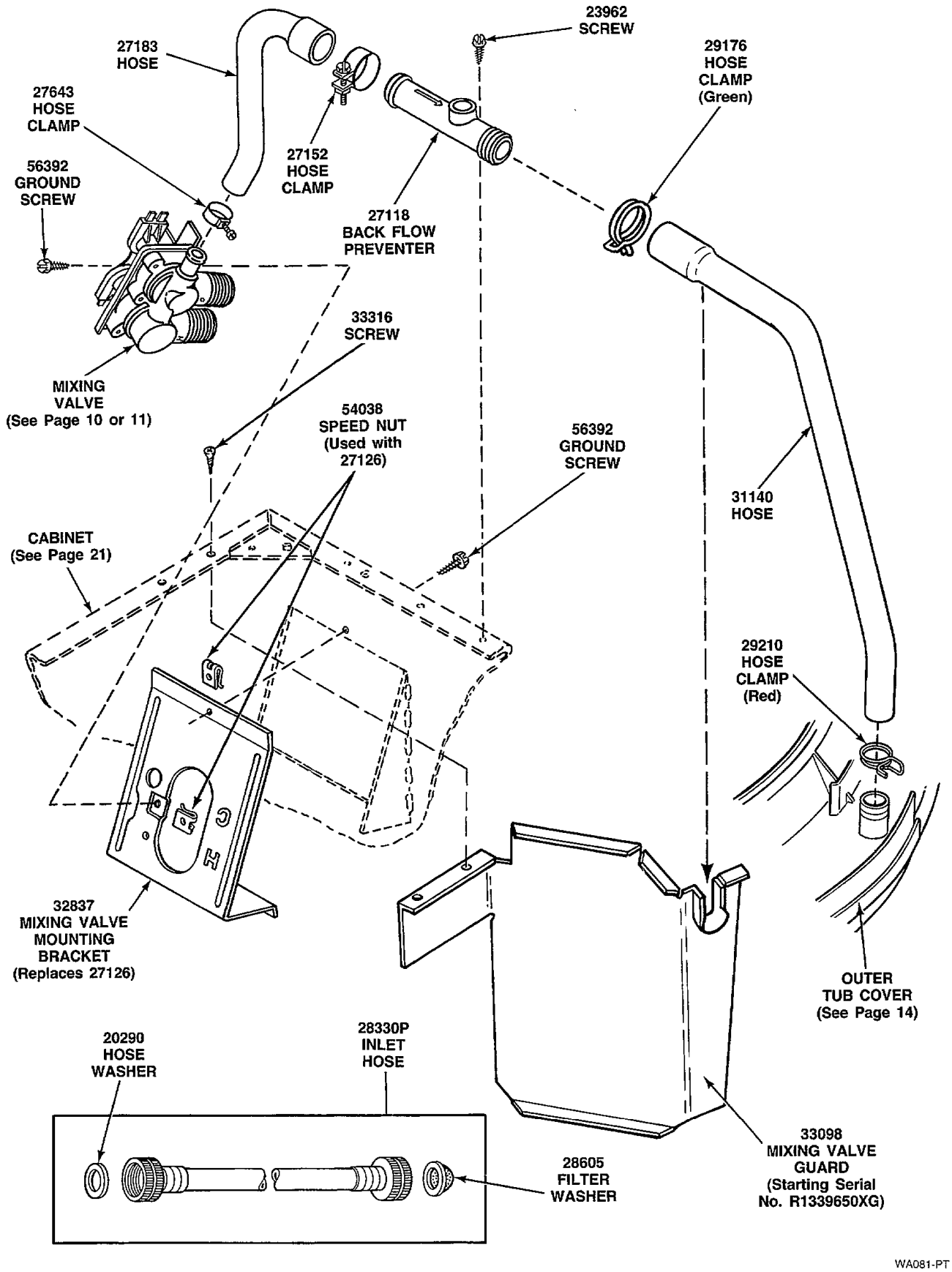


WA080-PT

CABINET TOP, LOADING DOOR AND CONTROL HOOD REAR PANEL

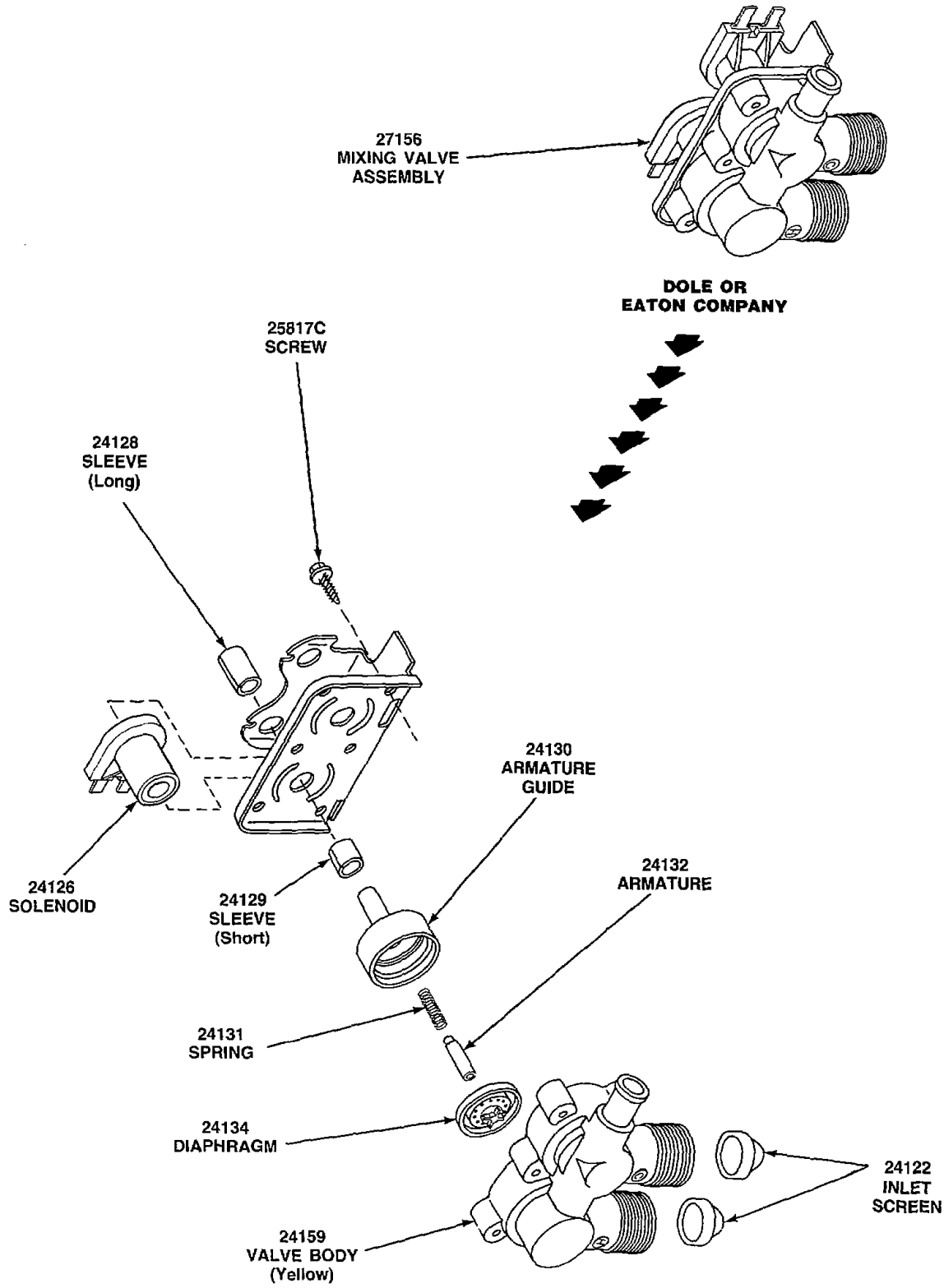


LOADING DOOR
OUT-OF-BALANCE SWITCH AND BRACKET ASSEMBLY

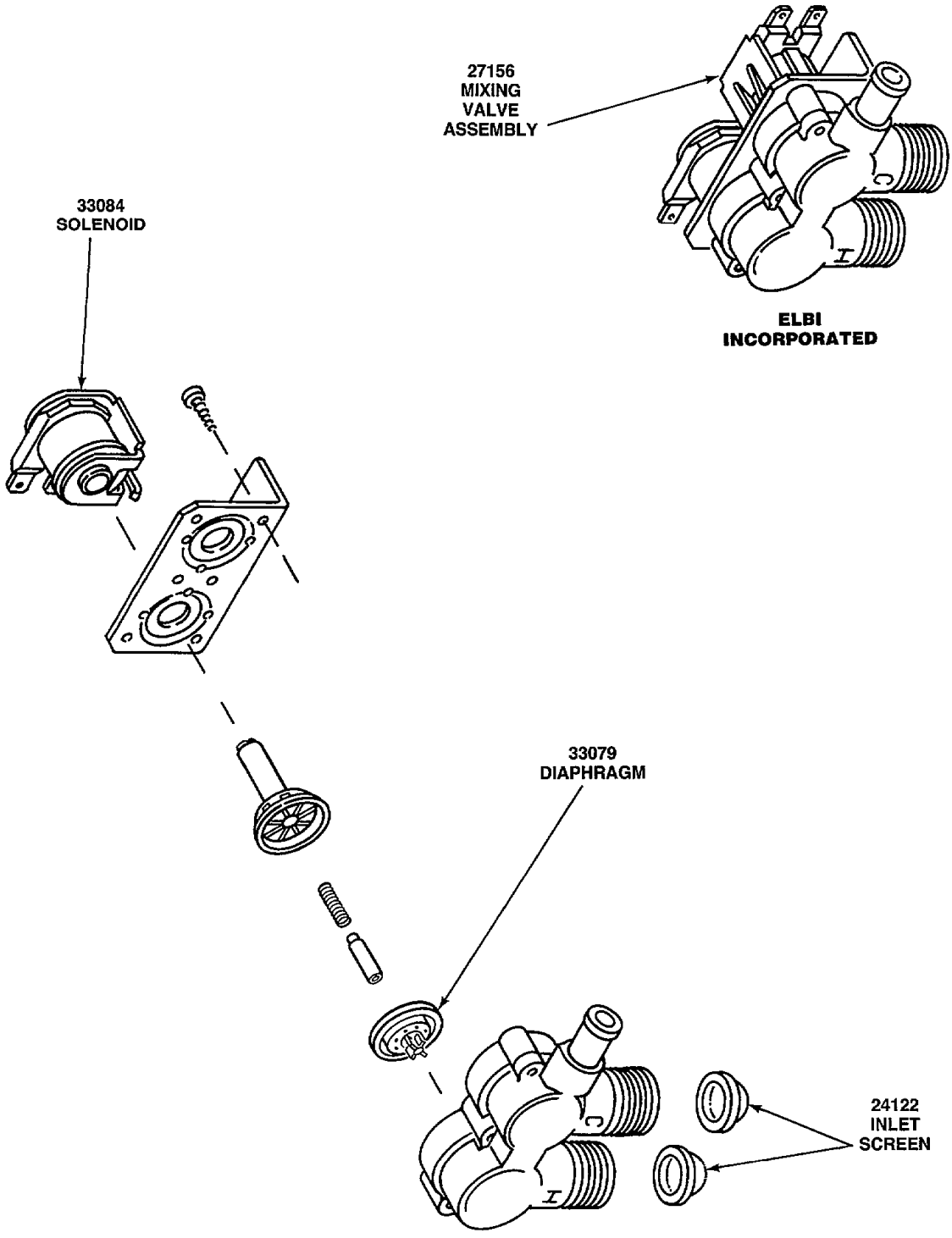


WA081-PT

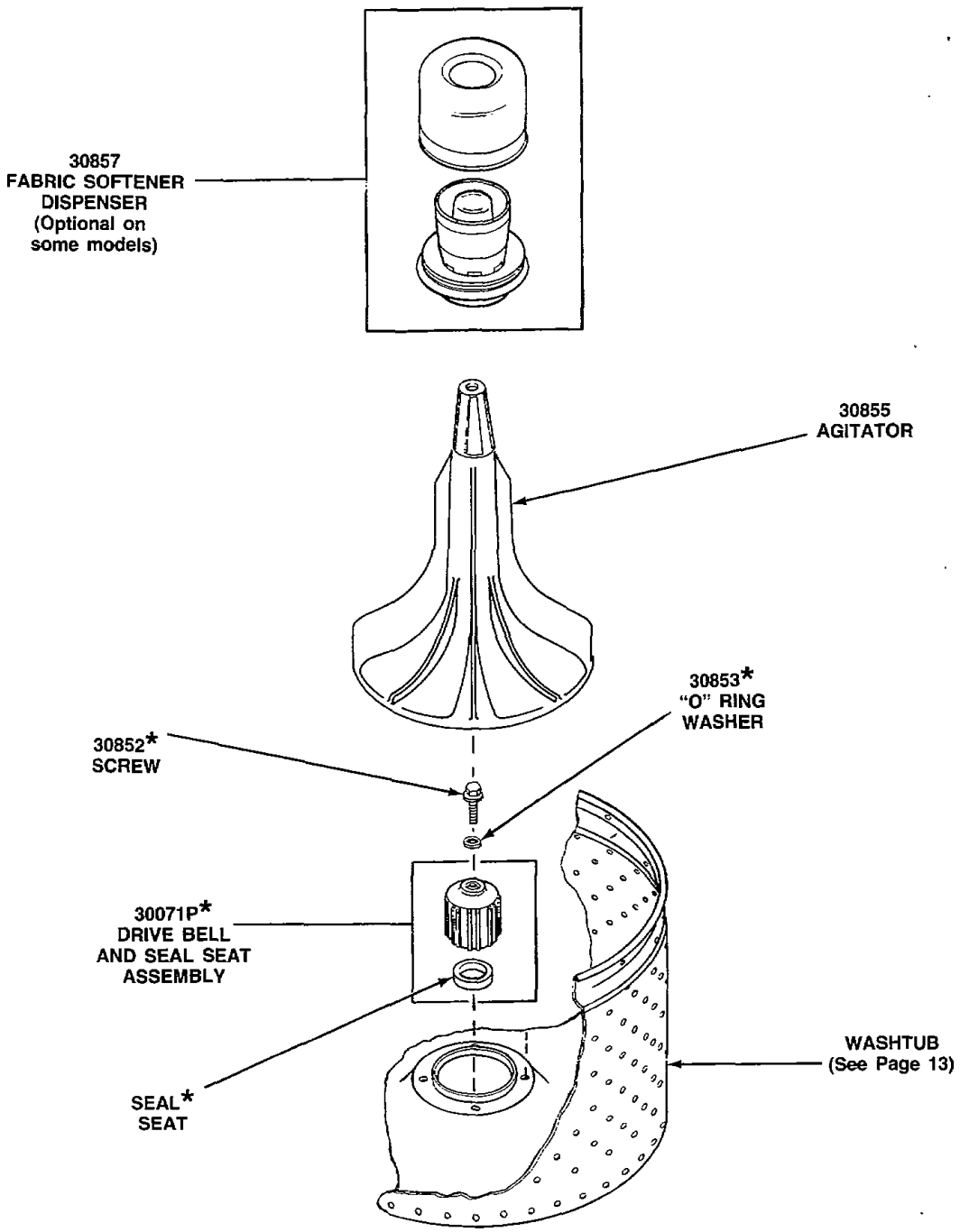
INLET HOSE, FILLER HOSE, BACK FLOW PREVENTER AND MIXING VALVE MOUNTING BRACKET



MIXING VALVE ASSEMBLY
(Dole or Eaton Company)



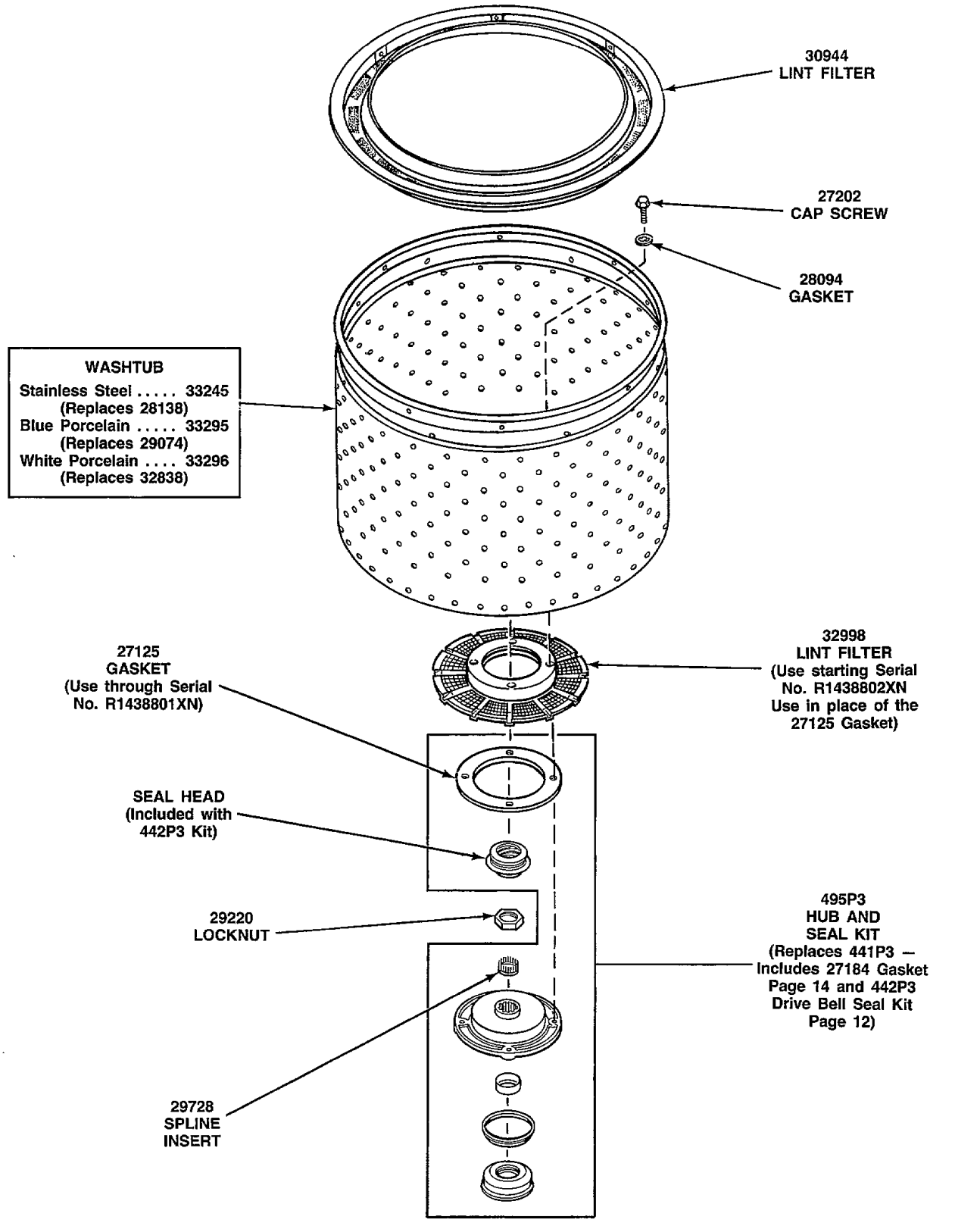
MIXING VALVE ASSEMBLY
(Elbi Incorporated)



442P3* DRIVE BELL
SEAL KIT
(Includes parts marked with an asterick and also the seal head, see Page 13.)

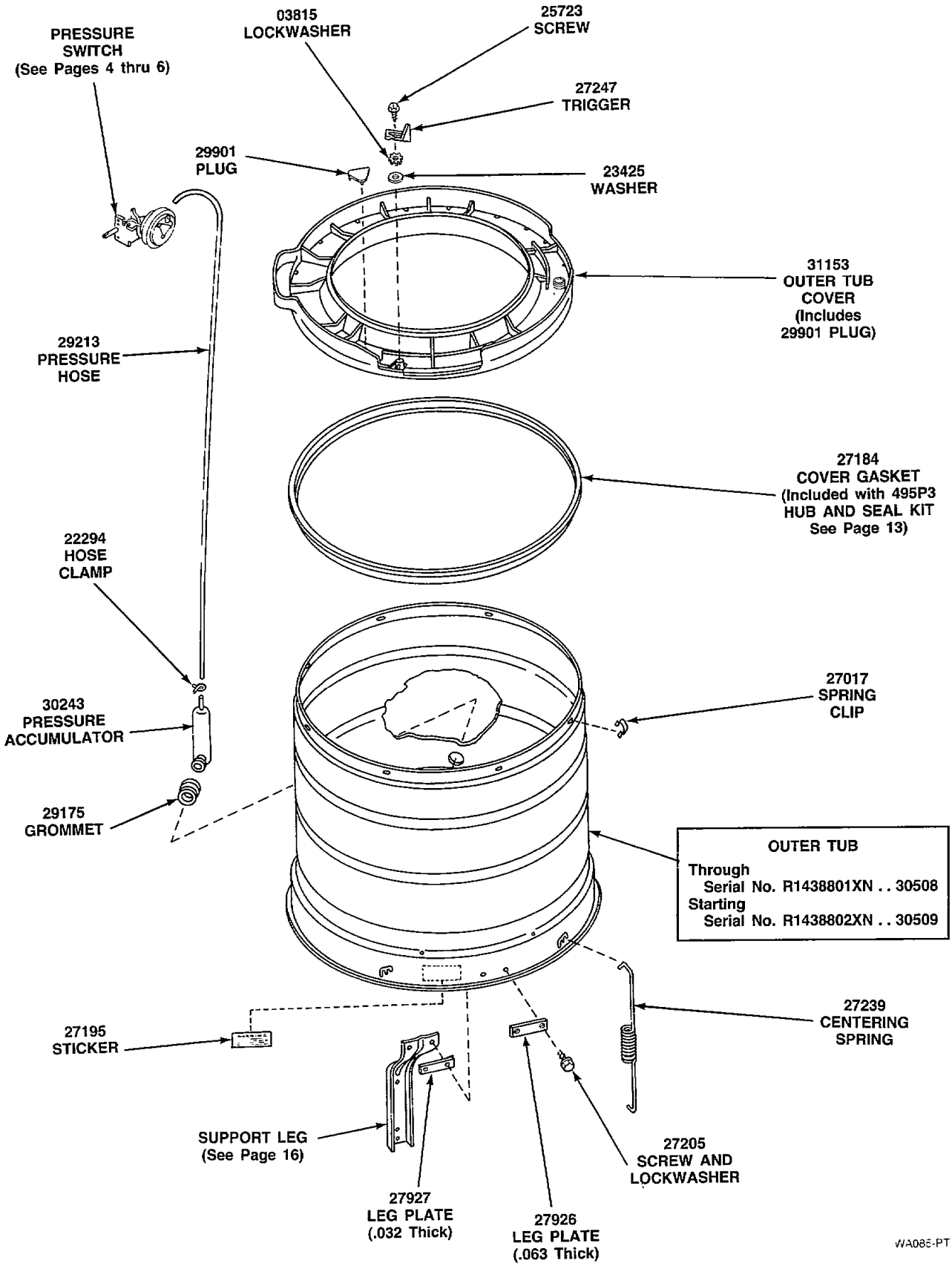
WA083-PT

AGITATOR, DRIVE BELL AND SEAL KIT

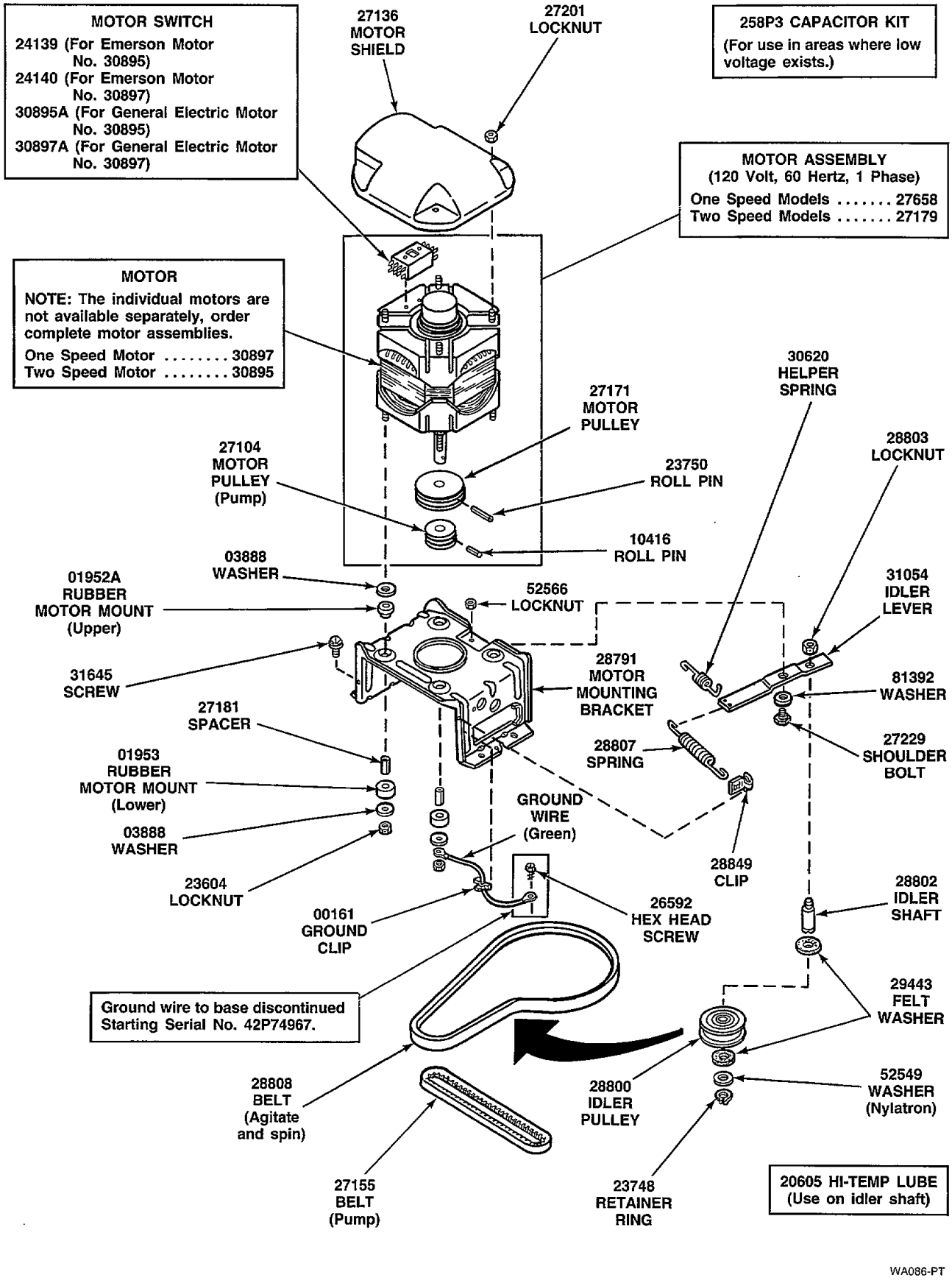


WA084-PT

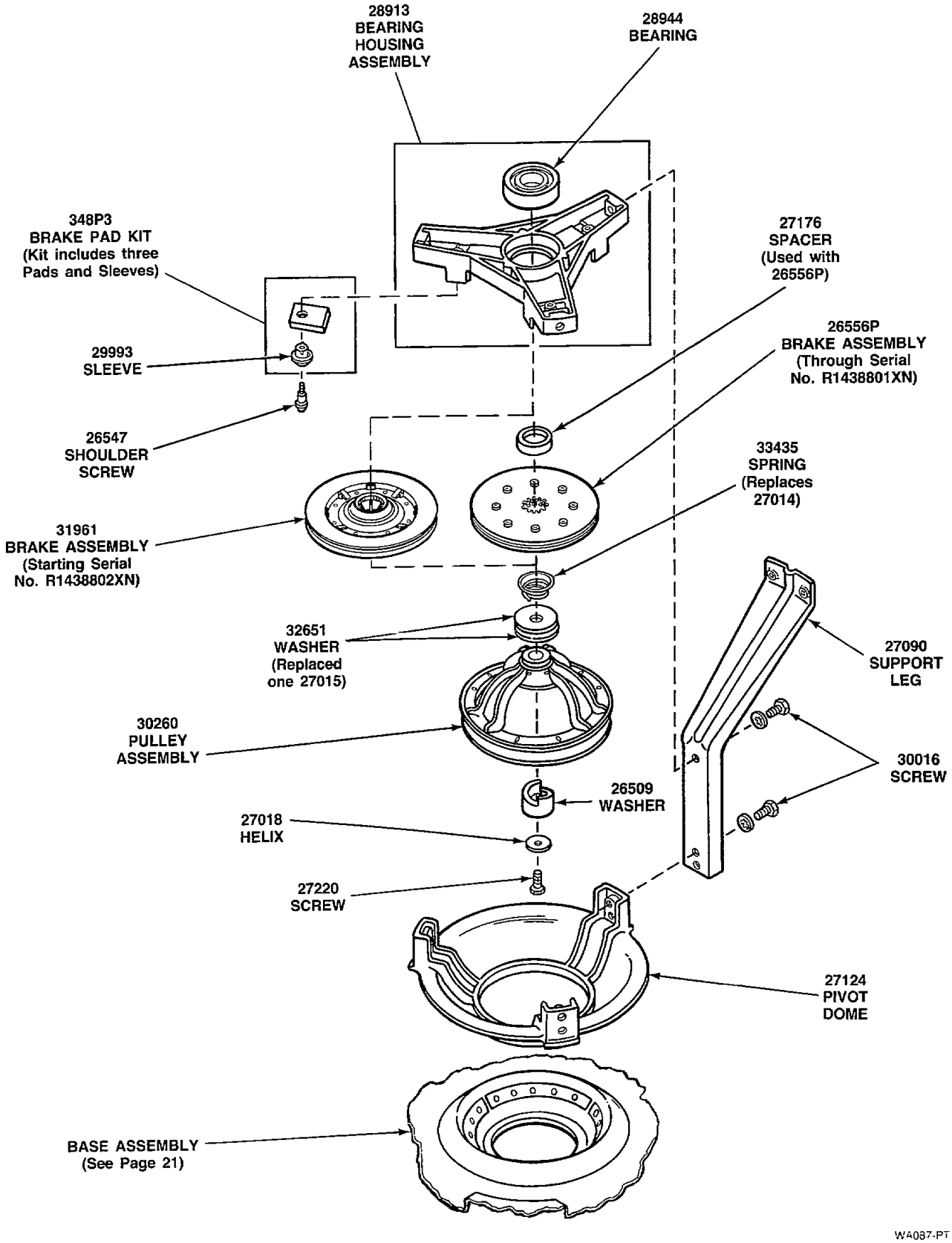
LINT FILTER, WASHTUB AND HUB



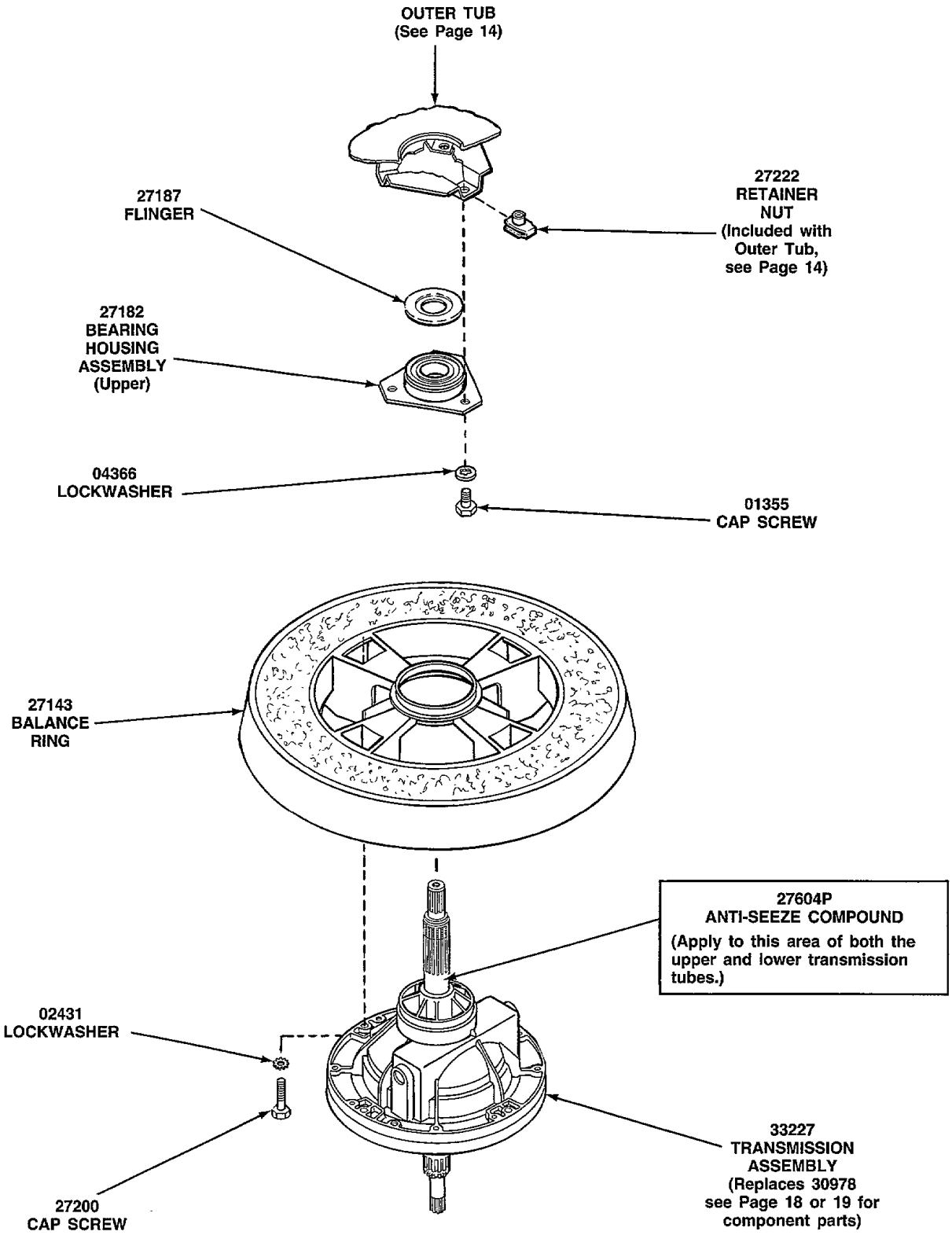
OUTER TUB, COVER AND PRESSURE HOSE



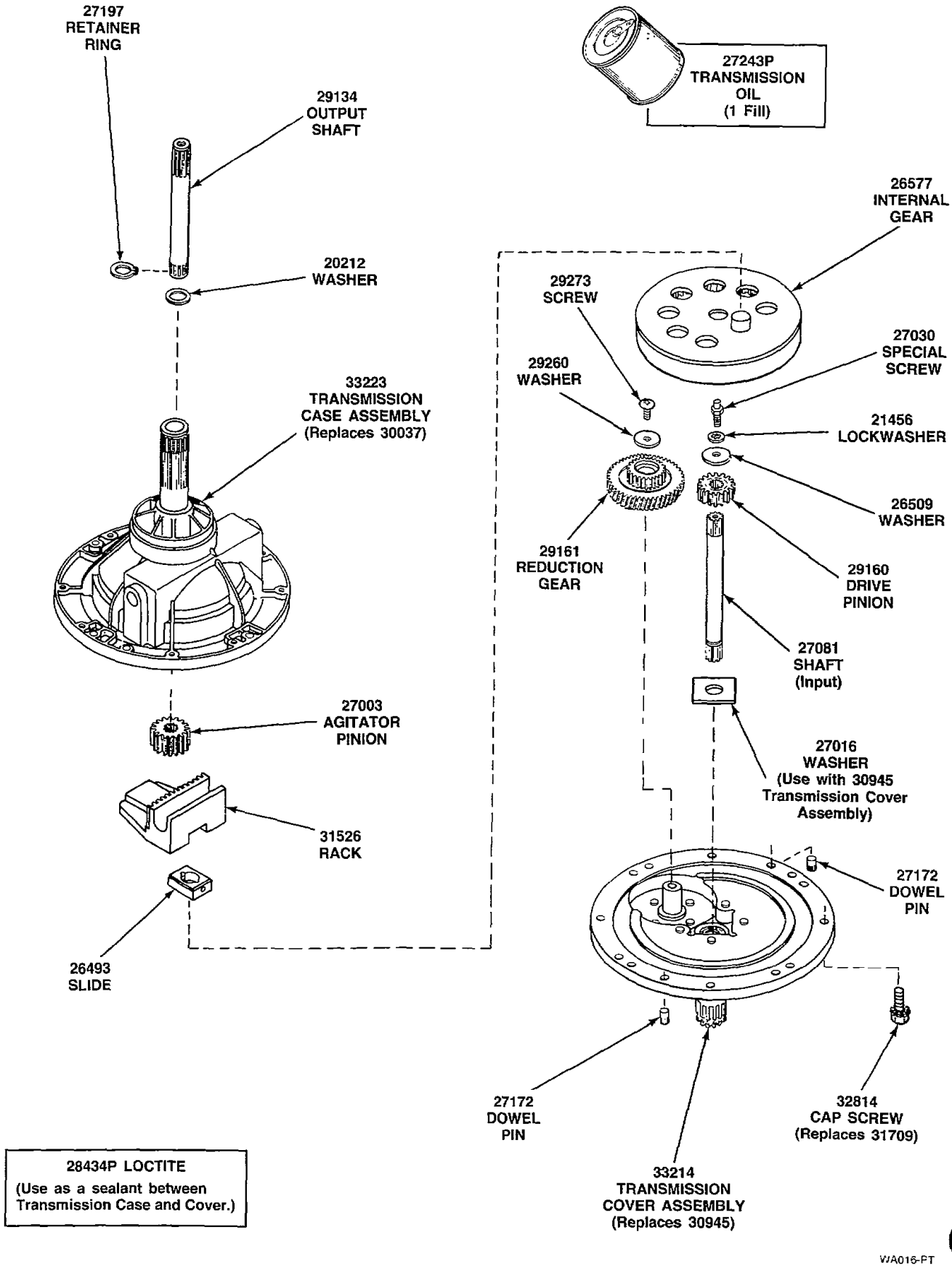
MOTOR, MOUNTING BRACKET, BELTS AND IDLER ASSEMBLY



BEARING HOUSING, BRAKE, PULLEY AND PIVOT DOME

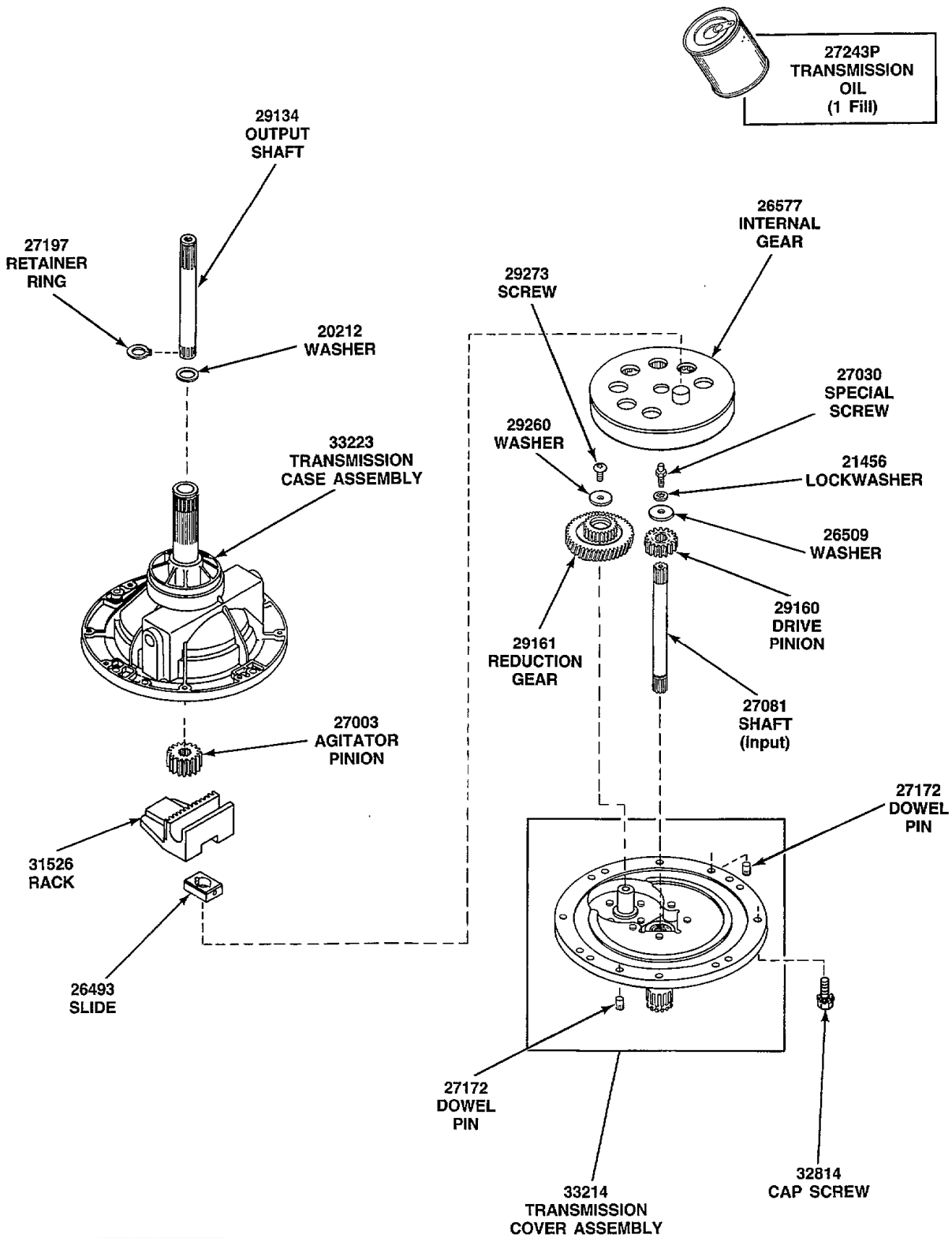


TRANSMISSION ASSEMBLY AND BALANCE RING



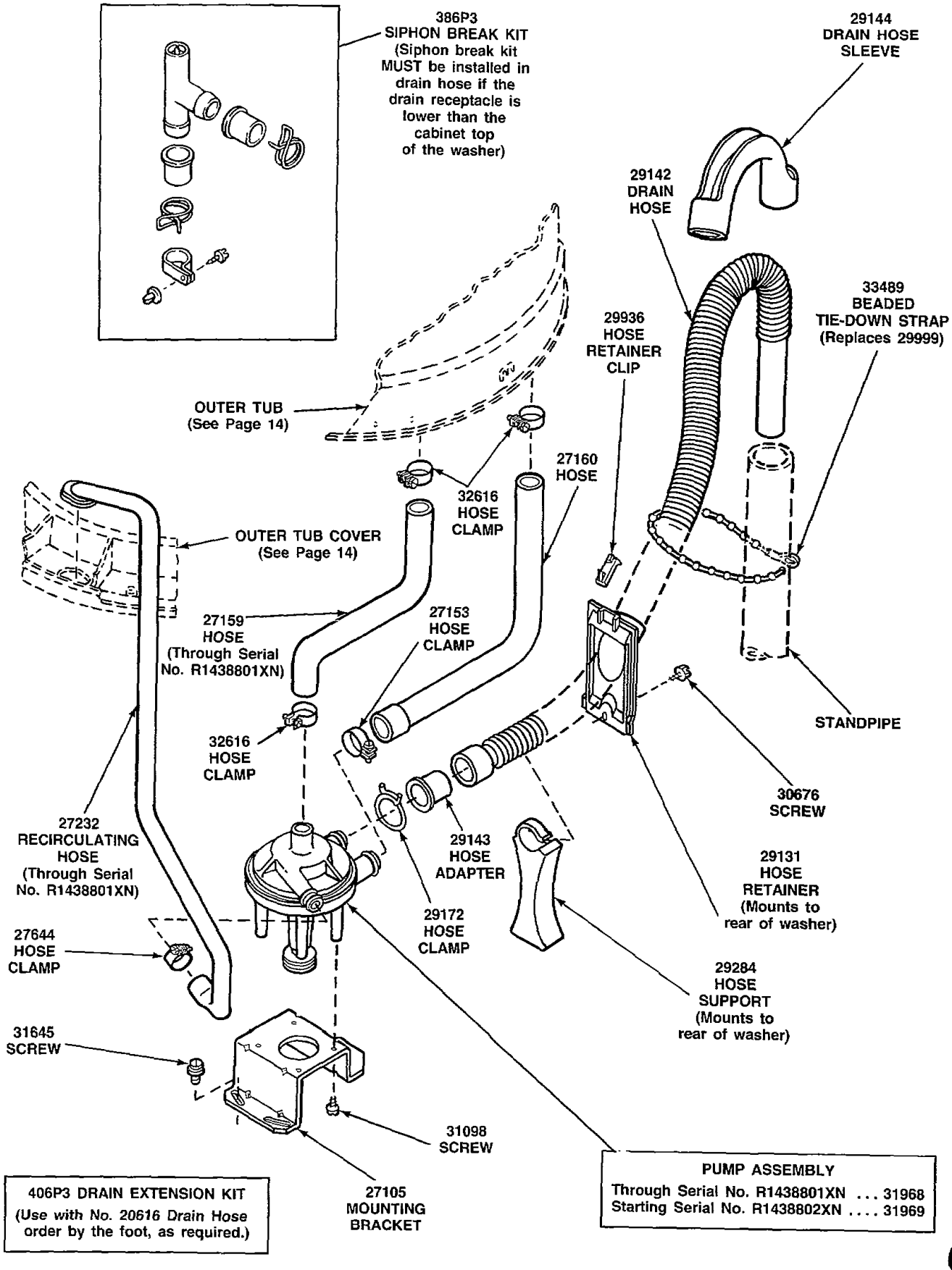
WA016-PT

COMPONENTS FOR 30978 TRANSMISSION ASSEMBLY

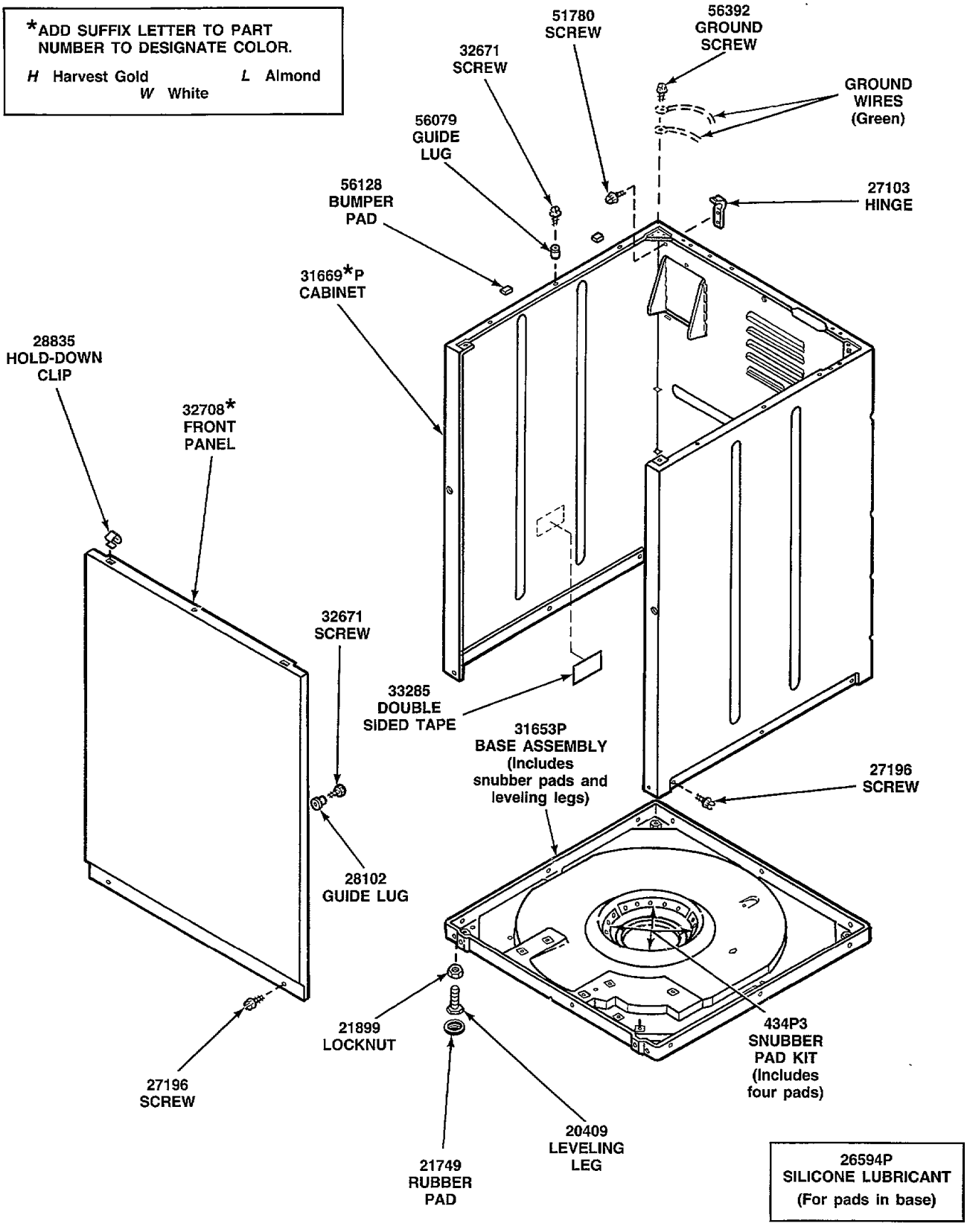


WA089-PT

COMPONENTS FOR 33227 TRANSMISSION ASSEMBLY



PUMP ASSEMBLY, BRACKET, HOSES AND SIPHON BREAK KIT



WA091-PT

FRONT PANEL, CABINET AND BASE

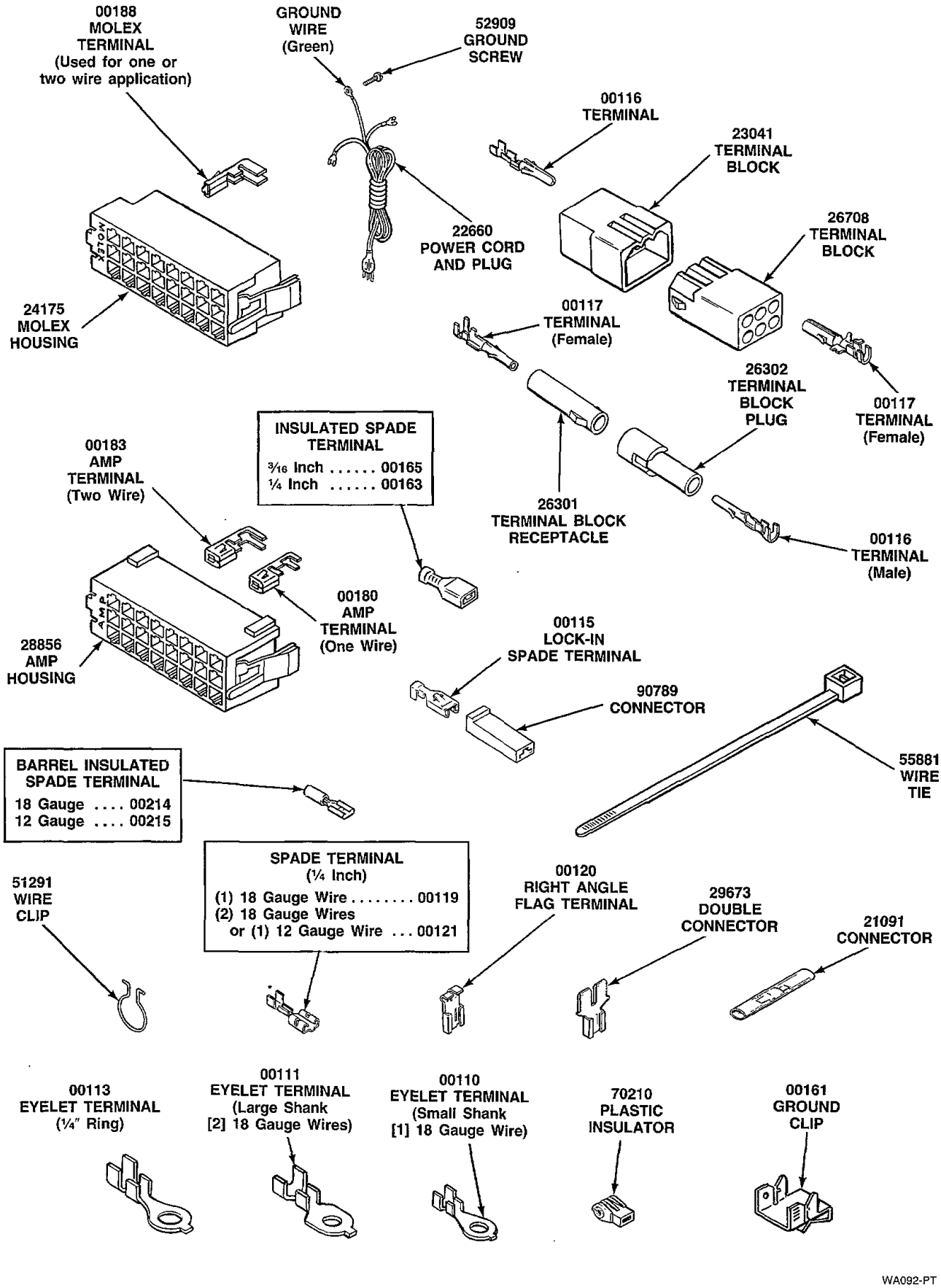
WIRE HARNESSES

When a wire harness is required, it is important that the correct model and serial numbers be submitted with the order. We will then be able to supply the correct wire harness.

Order the individual wire color and gauge by the part number listed below. Order wire by the foot and terminals and connectors as required.

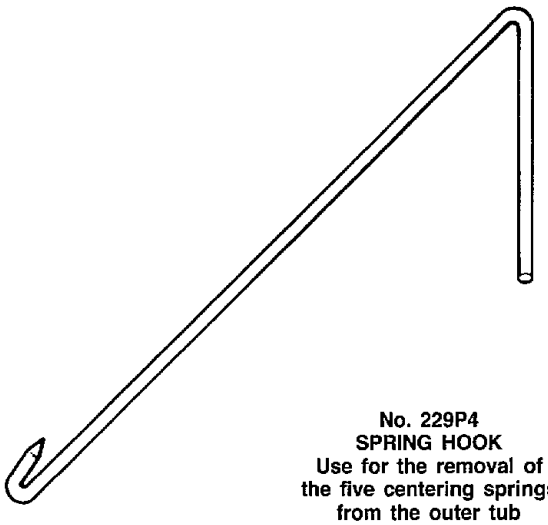
IMPORTANT: Always replace wires with proper gauge and color.

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

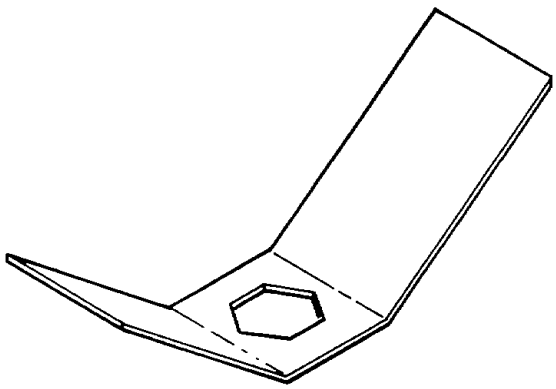


WA092-PT

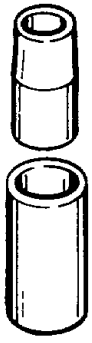
POWER CORD AND WIRE TERMINALS



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



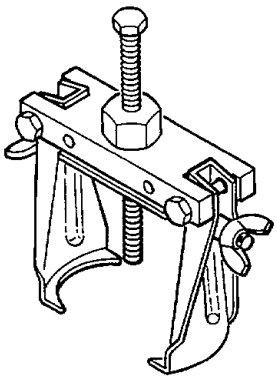
No. 237P4
HEX WRENCH
Use to remove hex
locknut from washtub hub



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

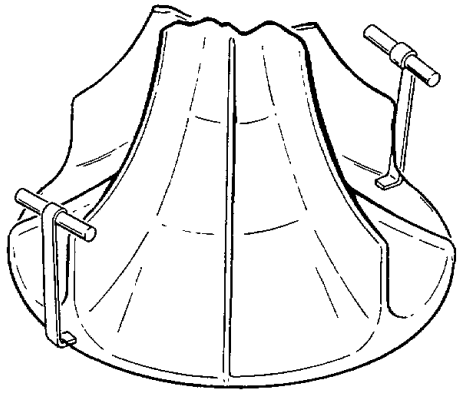
WA021-PT

Special Tools



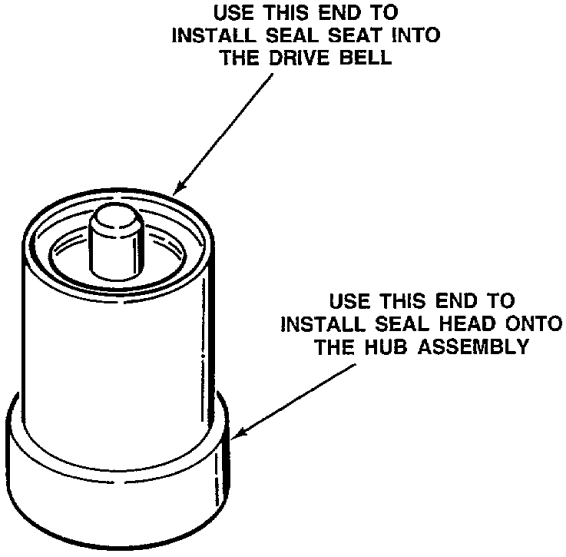
No. 253P4
BELL TOOL
Use for the removal and installation of drive bell to transmission shaft

WA022-PT



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

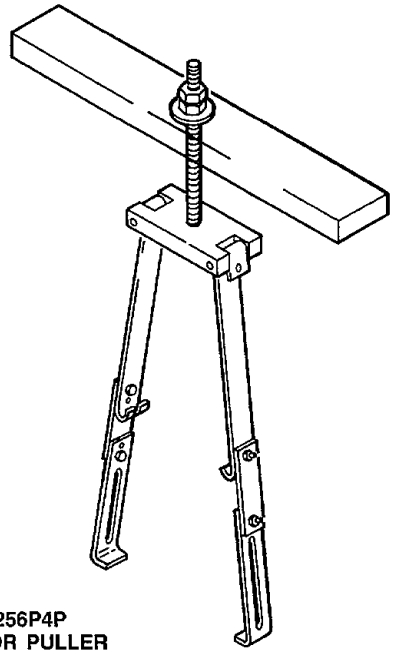
WA023-PT



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

WA024-PT

Piece of
2" x 4" x 28"



No. 256P4P
AGITATOR PULLER
Use to remove agitator from drive bell

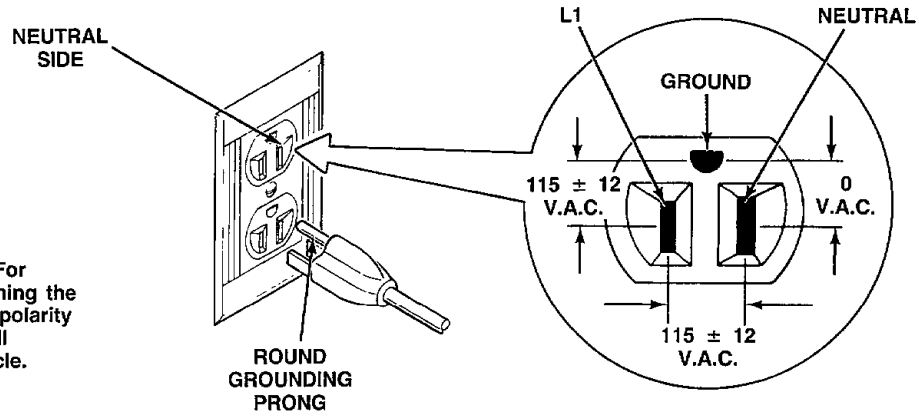
WA025-PT

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.



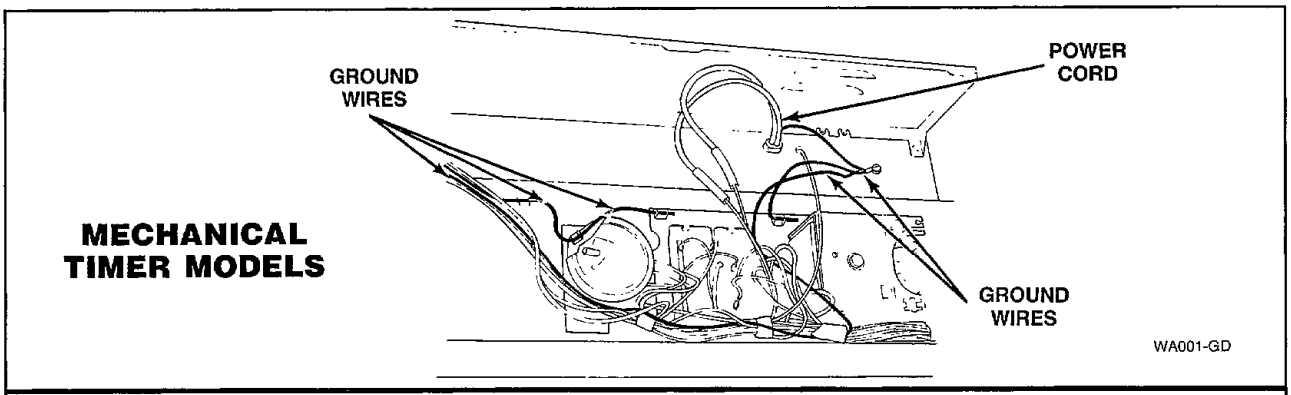
NOTE: For determining the correct polarity of a wall receptacle.

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

WW001-SV

Figure 1

2. POWER CORD TO CABINET TOP, CABINET TOP TO CONTROL HODE MOUNTING BRACKET, PRESSURE SWITCH MOUNTING BRACKET AND GROUND TAB ON GRAPHICS PANEL.



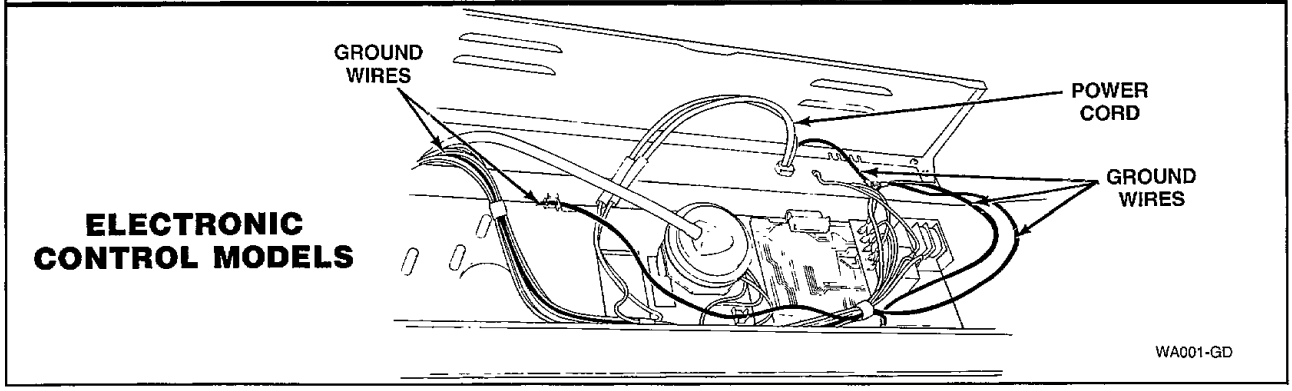


Figure 2

3. MAIN WIRE HARNESS TO TOP REAR CORNER GUSSET OF CABINET.

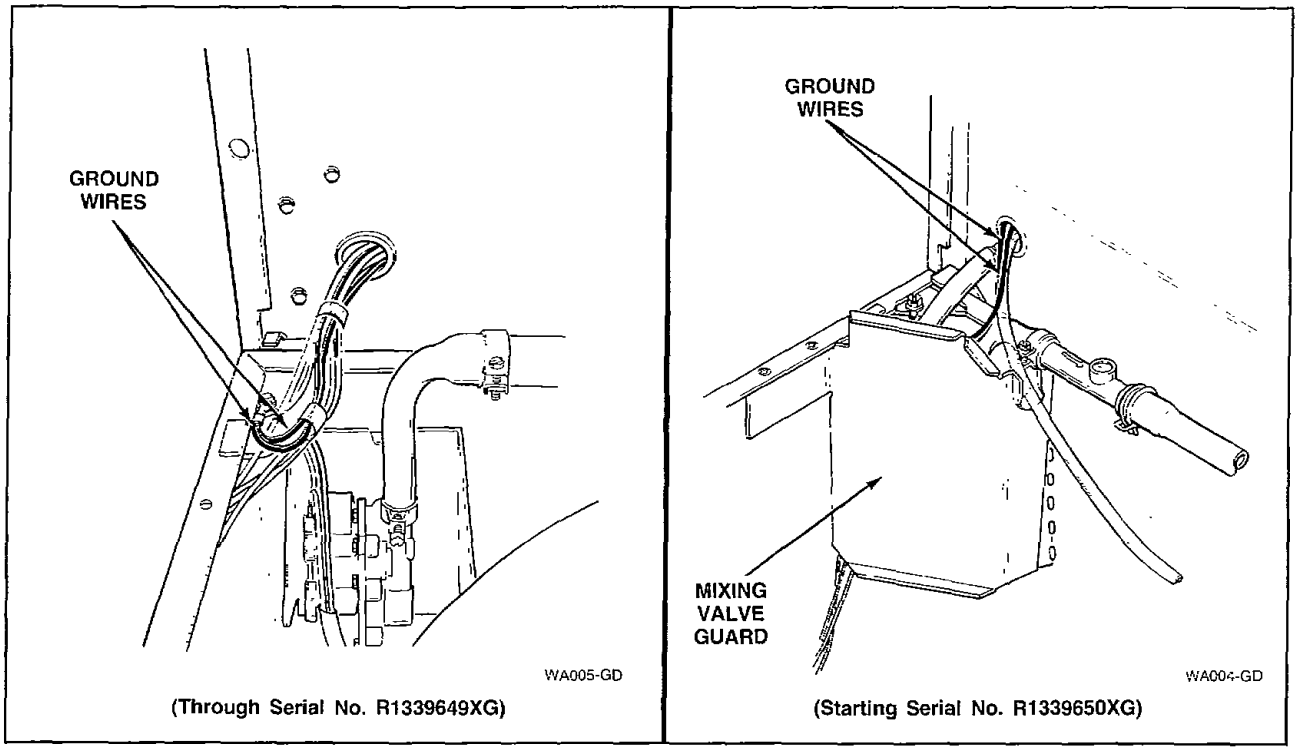


Figure 3

4. MOTOR TO MOUNTING BRACKET TO BASE (if present).

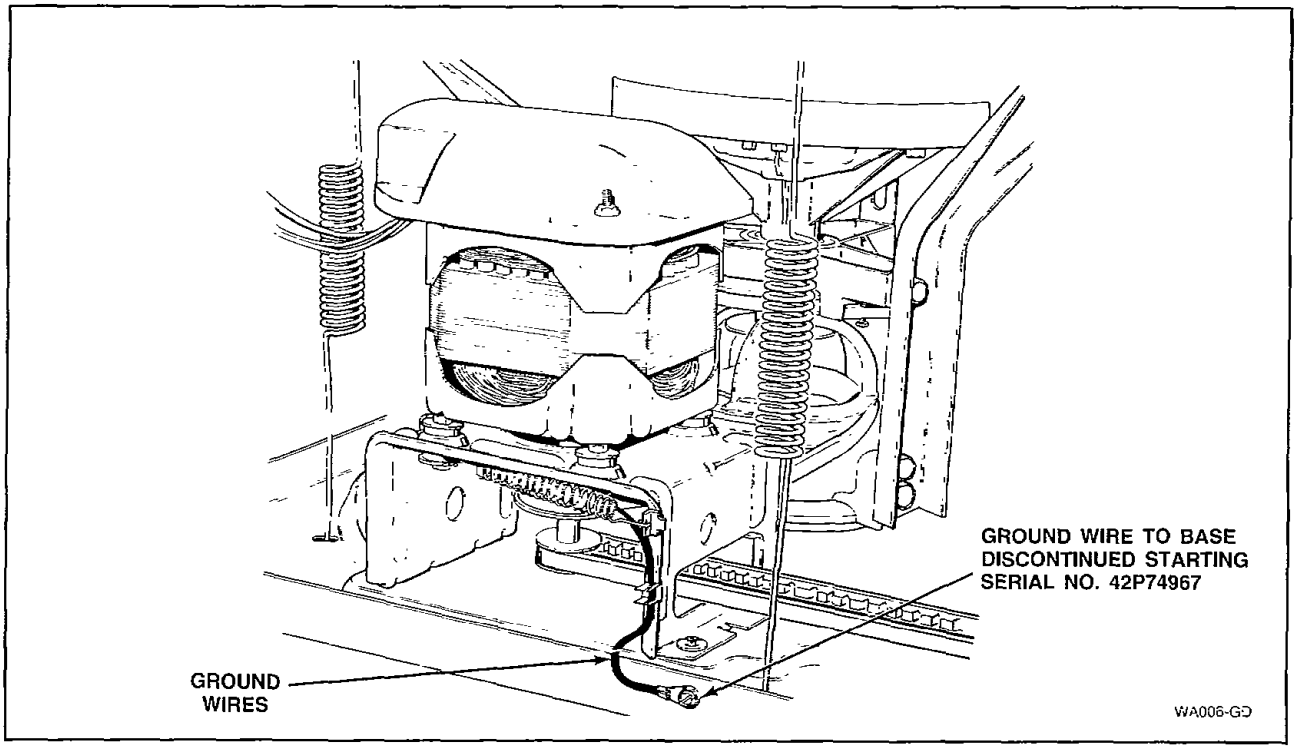


Figure 4

SECTION III
Service Procedures

To aid in the servicing of the washer, refer to the parts section for the assembly sequence.

⚠ 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.

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

⚠ WARNING

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 HOOD ASSEMBLY

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

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

TO REMOVE CONTROL HOOD END CAPS

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

6. ELECTRONIC CONTROL

Refer to Parts Section for electronic control removal.

IMPORTANT: When removing or installing an electronic control, handle the control by the edges, or the control could become damaged.

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

7. 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.

a. Remove six screws (three on top and three at lower front) holding the hood assembly to the control hood rear panel and cabinet top.
b. Unscrew timer knob from timer shaft (right hand thread), then remove the timer knob skirt.
c. Remove two screws holding timer to control hood mounting plate.

NOTE: DO NOT attempt to repair the timer.

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

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

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

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

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

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

8. TEMPERATURE SWITCH

Refer to Parts Sections for switch removal.

NOTE: Refer to wiring diagram when rewiring switch.

9. PRESSURE SWITCH

Refer to Parts Section for switch removal.

NOTE: Refer to wiring diagram when rewiring switch.

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

10. GRAPHICS PANEL

⚠ 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.

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

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

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

11. LOADING DOOR

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

12. 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.

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

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

NOTE: If the agitator cannot be removed using the agitator hooks, then the agitator will have to be removed using No. 256P4P Agitator Puller Tool. This tool can be used by following the instructions supplied with the tool.

13. AGITATOR DRIVE BELL AND SEAL SEAT ASSEMBLY

⚠ WARNING

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

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

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

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

NOTE: If the agitator cannot be removed using the agitator hooks, then the agitator will have to be removed using No. 256P4P Agitator Puller Tool. This tool can be used by following instructions supplied with the tool.

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

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

e. Back the bolt out of tool approximately three quarters of the way.
f. Place the tool over the bell making sure the indent on the jaw lines up with the wide slots on the bell.
g. Screw the bolt down through the hole in top of bell until bolt bottoms out in the hole in the transmission 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 two wing nuts to hold the jaws firmly against the drive bell.

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

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

j. Turn the 1/4 inch bolt out of the transmission shaft and remove tool and drive bell from 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 that 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 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 as you will damage the seals.

TO REINSTALL DRIVE BELL

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

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

c. Use an adjustable wrench and turn the large nut on the tool **CLOCKWISE** to force the drive bell down onto transmission shaft until the bell bottoms out on the 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 new No. 30852 Screw down between 45 to 55 inch pounds. Over torque will mushroom the plastic bell.

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

14. FRONT PANEL

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

Hold-Down Clips

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

Guide Lugs

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

15. PUMP BELT

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

NOTE: After installing pump belt, adjust belt, ***paragraph 38.***

(continued)

16. DRIVE BELT

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

NOTE: After installing belt, adjust belt, *paragraph 38.*

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

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

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

IMPORTANT: Drive belt MUST be replaced with belt No. 28808 (special clutch type belt), for proper washer operation.

TO INSTALL NO. 28808 DRIVE BELT

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

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

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

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

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

17. MOTOR AND MOUNTING BRACKET

a. Remove front panel, *paragraph 14.*
b. Disconnect motor wire harness from base wire harness at disconnect blocks.

NOTE: Starting with serial No. R1339650XG, the motor wire harness and base wire harness disconnect blocks are attached to the inside of the left side of the washer cabinet with double sided tape. If the disconnect blocks are removed during service, a new piece of tape will be needed to hold the harness disconnect blocks to the side of the washer cabinet.

c. Remove pump belt, *paragraph 15,* then remove drive belt, *paragraph 16.*

NOTE: When installing belts, adjust pump belt, *paragraph 38.* There is no drive belt adjustment.

d. If present, remove the screw holding ground wire to washer base.

⚠ 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.

e. Remove four screws holding motor and mounting bracket to washer base, then lift complete assembly out of washer.

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

f. Remove nuts, steel washers, spacers and rubber mounts holding motor to mounting bracket. Lift motor off mounting bracket and remove balance of rubber mounts and steel washers from motor mounting studs.

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

NOTE: Refer to Parts Section for motor and mounting bracket assembly sequence.

18. IDLER LEVER AND PULLEY

a. Remove motor and mounting bracket, *paragraph 17,* steps "a" through "e."
b. Remove nut, washer and bolt holding idler lever and pulley to motor mounting bracket.

NOTE: Refer to Parts Section for idler lever and pulley assembly sequence.

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

19. MOTOR DRIVE PULLEY OR PUMP PULLEY

a. Remove motor and mounting bracket, *paragraph 17,* steps "a" through "e."
b. Lay motor and mounting bracket on its side.

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

20. MOTOR SWITCH

a. Remove front panel, *paragraph 14.*
b. Remove nut holding motor shield to motor.
c. Disconnect external wires from motor switch terminals.

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

d. Remove two screws holding switch to motor.
e. Disconnect internal motor leads from switch terminals.

NOTE: Refer to Wiring Schematics, Page 71 or 72, for rewiring internal switch wires.

21. PUMP ASSEMBLY

a. Remove front panel, *paragraph 14.*
b. Remove pump belt, *paragraph 15.*

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

c. Remove the two front mounting screws, and loosen the rear screw.

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

d. Slide pump and mounting bracket toward rear of washer and lift assembly out of washer.
e. Loosen hose clamps and remove all hoses from pump assembly.

Pump Mounting Bracket

Remove four screws holding pump to mounting bracket.

NOTE: Refer to Parts Section for pump and mounting bracket assembly sequence.

22. CABINET TOP ASSEMBLY

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

NOTE: Cabinet top is self supporting, or use a small chain to support the cabinet top.

TO REMOVE CABINET TOP FROM WASHER

a. Repeat steps "a", "b" and "c" of *paragraph 22.*
b. Remove six screws (three on top and three at lower front) holding the control hood assembly to the control hood rear panel and cabinet top. Disconnect hose from pressure switch and push hose down through hole in cabinet top. Reinstall control hood assembly.
c. Disconnect wire harness at disconnect blocks.

NOTE: Starting with serial Number R1339650XG, the motor wire harness and the base wire harness disconnect blocks are secured to the left side of the washer cabinet with double sided tape. If the disconnect blocks are removed during service, then a new piece of tape will be needed to hold the harness disconnect blocks to the inside of the washer cabinet.

d. Through Serial No. R1339649XG, remove wire clips holding wire harness and pressure hose to top flange of left side of washer cabinet.
e. Tape loading door closed.
f. Lift front of cabinet top slightly and pull forward to disengage from rear hold-down bracket.

(continued)

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

NOTE: Starting with Serial No. R1339650XG, a guard was added to the mixing valve area. This guard must be removed before disconnecting the wires from the mixing valve solenoids.

⚠ WARNING

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

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

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

⚠ WARNING

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

23. DOOR AND OUT-OF-BALANCE SWITCH AND BRACKET ASSEMBLY

NOTE: Starting with Serial No. R1339650XG, a guard was added to the lid switch and bracket assembly. If the lid switch and bracket assembly are removed for service and the guard is removed, the guard MUST be reinstalled on the lid switch and bracket assembly to reduce the risk of an electric shock.

a. Hinge cabinet top or remove, *paragraph 22.*
b. Remove two screws holding switch and bracket assembly to underside of the right front corner flange of the cabinet top.
c. Disconnect wires from switch.

NOTE: Refer to wiring diagram when rewiring switch.

d. Remove two screws holding switch to bracket.

NOTE: After installing switch and bracket assembly, adjust per *paragraph 39.*

24. MIXING VALVE ASSEMBLY

NOTE: Starting with Serial No. R1339650XG, a guard was added to the mixing valve area. The guard must be removed before the mixing valve can be serviced.

⚠ WARNING

To reduce the risk of an electric shock, the guard must be reinstalled after removal for service.

a. Hinge cabinet top or remove.
b. Remove screw holding mixing valve to mounting bracket at rear of washer cabinet.

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

c. Pull mixing valve out toward front of washer far enough to permit disconnecting water inlet hoses from mixing valve.
d. Disconnect wires from mixing valve solenoids.

NOTE: Refer to wiring diagram when rewiring solenoids.

25. WASHTUB AND LINT FILTER

a. Remove agitator, *paragraph 12.*
b. Hinge cabinet top or remove, *paragraph 22.*
c. Disconnect filler hose from backflow preventer.

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

d. Remove eight clips holding outer tub cover to tub, lift cover off tub and set beside washer cabinet.

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

e. Remove four screws and washers holding washtub to hub.

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

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

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

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

TO REMOVE LINT FILTER FROM WASHTUB

a. Place a small screwdriver in behind the slots provided in the lint filter.
b. Carefully pry the pins of the lint filter out of the holes in the washtub.

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

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

TO INSTALL LINT FILTER IN WASHTUB

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

26. WATER SEAL AND HUB ASSEMBLY

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

a. Remove two screws from bottom edge of front panel.
b. Pull bottom of panel away from washer until hold-down clips (located on top flange of panel) disengage from slots in cabinet top.
c. Remove two cabinet top hold-down screws.
d. Remove agitator, *paragraph 12.*
e. Disconnect filler hose from backflow preventer, then remove the eight clips holding cover to outer tub.

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

f. Lift cover off outer tub and set beside washer cabinet, then remove old cover gasket.
g. Remove the four screws holding washtub to hub, then lift washtub out of outer tub.

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

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

h. Remove agitator drive bell, *paragraph 13.*
i. Remove the seal head from the hub.

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

j. Remove the large hex nut, using No. 237P4 Hex Wrench.
k. Remove the spline insert from the transmission tube.

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

l. Remove hub from splines on transmission tube.

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

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

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

TO INSTALL NO. 495P3 HUB AND SEAL KIT

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

a. Apply a small amount of No. 27615P Sealant, (supplied in kit) around the outer surface of the tub flange.

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

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

IMPORTANT: Do not over lubricate!

(continued)

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

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

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

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

h. While holding the hub down, place the spline insert onto the transmission tube until it bottoms against the hub. Then place the hex nut on the transmission tube (with the larger inside bevel on the nut toward the spline insert), then tighten the nut using a torque wrench, or the No. 237P4 Hex Wrench.

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 the bottom of washtub.
j. Carefully place the 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 the old gasket are removed from the bottom of the washtub.

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

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

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

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

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

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

n. Reinstall filler hose on backflow preventer.

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

TO INSTALL DRIVE BELL AND NO. 442P3 SEAL KIT

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

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

b. Install the new seal seat (supplied in kit) into the drive bell using the small end of the No. 255P4 Seal Tool.
c. Position drive bell over transmission shaft. Rotate drive bell until splines in drive bell line up with splines on transmission shaft.
d. Place the No. 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 the drive bell during this operation.

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

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

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

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

j. Reinstall cabinet top and secure to washer cabinet using screws previously removed.
k. Reinstall front panel.
l. Place washer into the 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 the petroleum jelly, applied to the water seal, a chance to run in on the seal surfaces before water is added to the washer.

27. OUTER TUB

a. Remove agitator, *paragraph 12.*
b. Remove front panel, *paragraph 14.*
c. Remove two cabinet top hold-down screws and hinge cabinet top or remove, *paragraph 22.*
d. Loosen hose clamp and disconnect filler hose from backflow preventer, then remove the eight clips holding cover to the outer tub.

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

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

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

f. Remove four screws and washers holding washtub to hub.

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

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

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

h. Remove agitator drive bell, *paragraph 13.*
i. Remove the large hex nut using No. 237P4 Hex Wrench. Then remove the spline insert from transmission tube.

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

j. Remove hub from splines on transmission tube.

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

k. 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.

NOTE: When reinstalling or replacing outer tub, always install a new No. 495P3 Hub and Seal Kit, *paragraph 26.*

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 the idler lever tension. If the idler lever spring, or helper spring, are overstretched, it will affect the washer operation.

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

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

(continued)

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

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

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

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

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

NOTE: To prevent porcelain damage, leg plates must be installed on both sides of the 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 the outside of tub flange.) Do not overtighten the screws as this could cause stripping or porcelain damage.

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

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

28. DRIVE PULLEY AND HELIX

a. Remove two screws from bottom edge of front panel.
b. Pull bottom of panel away from washer until hold-down clips (located on top flange of panel) disengage from slots in cabinet top.
c. Loosen two front mounting screws and loosen one rear mounting screw holding pump and bracket to washer base. 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 38.*

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 the idler lever tension. If the idler spring, or helping spring, are overstretched, it will affect the washer operation.

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

NOTE: Starting with Serial No. R1339650XG, the motor wire harness and base wire harness disconnect blocks are attached to the inside of the left side of the washer cabinet with double sided tape. If the disconnect blocks are removed during service, a new piece of tape will be needed to hold the harness disconnect blocks to the inside of the washer cabinet.

i. If present, remove screw holding ground wire to washer base.

⚠ 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.

j. Remove four screws holding motor and mounting bracket to washer base, then lift complete assembly out of washer.

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

k. Remove screw, washer and helix holding drive pulley to the input shaft of the transmission assembly.
l. 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 n place between the spring and drive pulley when reassembling, see Parts Section for assembly sequence.

NOTE: When reassembling, place a small amount of No. 21814 Lubricant to the top side of the drive pulley that will be contacting the large flat washers. Lubricate the helix ramps with No. 03200 Lubricant.

29. BRAKE ASSEMBLY

a. Remove drive pulley and helix, *paragraph 28.*
b. Using a right angle needle nose pliers, remove spring from around lower transmission tube (located inside the brake assembly).

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

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

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 Parts Section for assembly sequence.

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

30. LOWER BEARING HOUSING

a. Remove two screws from bottom edge of front panel.
b. Pull bottom of panel away from washer until hold-down clips (located on top flange of panel) disengage from slots in cabinet top.
c. Remove two cabinet top hold-down screws, and hinge cabinet top or remove, *paragraph 22.*
d. Remove agitator, *paragraph 12.*
e. Disconnect filler hose from backflow preventer.

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

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

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

g. 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, it will affect the washer operation.

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

(continued)

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

With the idler spring and helper spring hooked to the motor mounting bracket, the idler lever extends out through the rear of the bracket. When removing or reinstalling the 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 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.

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

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

k. Disconnect hoses between outer tub and pump assembly.

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

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

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

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

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

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

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

TO REMOVE BEARING

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

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

31. TRANSMISSION ASSEMBLY

a. Remove two screws from bottom edge of front panel.
b. Pull bottom of panel away from washer until hold-down clips (located on top flange of panel) disengage from slots in cabinet top.
c. Remove two cabinet top hold-down screws and hinge cabinet top or remove, *paragraph 22.*
d. Loosen hose clamp and disconnect filler hose from backflow preventer. Then remove the eight clips holding cover to outer tub.

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

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

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

f. Remove four screws and washers holding washtub to hub.

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

g. Lift washtub and lint filter out of outer tub.

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

h. Remove drive bell, *paragraph 13,* 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 the old water seal from the outer tub.

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

NOTE: When reinstalling or replacing the outer tub, we recommend installing a new No. 495P3 Hub and Seal Kit, *paragraph 26.*

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 the idler lever tension. If the idler spring and helper spring are overstretched, it will affect the washer operation.

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

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

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

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

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

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

o. Disconnect hoses between outer tub and pump assembly.

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

p. Loosen hose clamp holding pressure hose to pressure accumulator and remove hose. Then remove tape holding pressure hose to outer tub.
q. Grasp outer tub and lift complete tub assembly (with transmission, balance ring and pivot dome attached) straight up and out of washer cabinet.
r. Turn the 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, needle bearing, and bearing races (if present) and large flat washer(s) from transmission.

(continued)

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

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

IMPORTANT: When 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, 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 the transmission tube.

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

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 the outside of tub flange.) Do not overtighten the screws as this could cause stripping or porcelain damage.

v. Remove four screws and lockwashers holding 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-Seeze Compound be applied to the area of the transmission tubes where they will be contacting the upper and lower bearings.

When reinstalling the transmission assembly, 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. Carefully lower transmission through balance ring and upper bearing. DO NOT DROP OR LOWER TRANSMISSION ASSEMBLY INTO POSITION TOO HARD as this can cause the bearing to move within the bearing housing which will cause vibration, noise, wear or no spin.

TO DISASSEMBLE TRANSMISSION ASSEMBLY (Refer to Parts Section for assembly sequence)

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

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

b. Before disassembling the transmission halves, mark the outer edge of the transmission case and cover so the two can be reassembled in the same position.
c. Place the transmission in the vise so three of the eight screws holding the transmission case and cover together are in the 12, 4 and 7 o'clock positons.
d. Loosen the three screws, mentioned in step "c", approximately two turns. DO NOT remove these three screws at this time. Remove the remaining five screws and lockwashers completely.
e. Remove the transmission assembly from the vise.
f. While holding the 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 the three screws and lockwashers.
g. Remove the screw and washer holding the reduction gear to the transmission cover and remove gear.
h. Remove the special screw, lockwasher and flat washer holding the drive pinion to the input shaft.

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

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

IMPORTANT: Carefully examine the area inside the 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 the complete transmission cover assembly. The individual components are not available separately.

k. Remove the internal gear, slide and rack from the transmission case.
l. Remove the transmission case from the vise and drain the oil.
m. Remove the retainer ring from the output shaft.

n. Use a hammer and punch, carefully drive shaft out of the agitator pinion.
o. Carefully remove output shaft and washer from the transmission case.

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

TO REASSEMBLE TRANSMISSION ASSEMBLY

IMPORTANT: Wash all the individual components in a cleaning solution (mineral spirits). Wipe the inside of the transmission case and cover with a clean cloth, dampened with cleaning solution, to remove any impurities. DO NOT allow the 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 the transmission case.
b. Place agitator pinion on splines of output shaft and press onto shaft.
c. Install retainer ring on output shaft.
d. Place the transmission case into a vise. Clamp only the case, not the shaft.
e. Place the rack inside the transmission case with the rack resting on the bar in the case. Agitator pinion must engage the rack.

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

f. Position the slide in the slot on the rack.

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

g. Place the internal gear into the transmission case. Make sure the guide pin on the internal gear fits in the hole on the 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 the input shaft into the cover starting at the outer end of the cover tube.

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

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

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

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

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

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

m. Apply a bead of sealant, No. 28434P Loctite, on the mating surface of the transmission case.

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

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

32. BALANCE RING

a. Remove transmission assembly, *paragraph 31,* steps "a" through "w".
b. Lift balance ring off outer tub.

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

33. UPPER BEARING ASSEMBLY

a. Remove transmission assembly, *paragraph 31,* steps "a" through "w".
b. Remove screws and lockwashers holding each support leg to outer tub. Lift complete pivot dome (with drive pulley, brake assembly, lower bearing housing, transmission assembly and balance ring attached) off outer tub.

(continued)

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 leg and tub flange and the thicker plate must be installed on the outside of 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.

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

34. SNUBBER PADS

a. Remove transmission assembly, *paragraph 31*, steps "a" through "r".
b. Scrape the old snubber pads from the washer base.
c. Thoroughly clean the area of the base where the new snubber pads will be installed.

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

TO INSTALL NO. 434P3 SNUBBER PAD KIT

a. Brush approximately 3/4 inch wide strip of No. 22506P Adhesive to the dome area of the base where the new pads will be applied.

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

b. Carefully align and apply the new snubber pads with fluffed side against the base dome and make sure pads are equally spaced.

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

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

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

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

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

NOTE: Springs must be hooked into the center of the three notches.

f. Connect the hose from the outer tub to the pump and tighten hose clamp.
g. Reconnect idler spring to clip on motor mounting bracket, and helper spring into the back hole in the mounting bracket.
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 back up through hole in cabinet top.
j. Reconnect the filler hose to the backflow preventer.

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

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

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

SECTION IV
Adjustments

35. LEVELING LEGS

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

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.

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

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

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

36. PRESSURE SWITCH

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

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

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

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

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

37. BELT (Agitate and Spin)

No belt adjustment is required.

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

38. BELT (Pump)

NOTE: Adjustment must be made after motor has been properly positioned, see *paragraph 37.*

a. Remove front panel, *paragraph 14.*
b. Loosen the two front mounting screws, 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 1/2 inch (12.7 mm) from its normal position by applying moderate pressure (1-1/2 pounds — .675 kg) to a point midway between pulleys.
d. After belt tension is obtained, tighten the three pump mounting bracket screws.

39. OUT-OF-BALANCE SWITCH TRIGGER

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

a. Remove front panel, *paragraph 14.*
b. Raise or remove cabinet top, *paragraph 22.*
c. Loosen screw holding trigger to tub cover, move trigger to the right (increases sensitivity) or to the left (decreases sensitivity).

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

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

SECTION V
Service Helps

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

40. NO HOT WATER

POSSIBLE CAUSE	TO CORRECT
Hot water supply faucet is closed	Open faucet.
Water supply is cold.	Check water heater.
Kinked hot water inlet hose.	Straighten or replace hose.
Clogged mixing valve screen, or screen in outer end of inlet hose nearest water supply faucet.	Disconnect hot water inlet hose, and clean or replace screen.
Inoperative hot water mixing valve solenoid.	Test solenoid and replace if inoperative.
* Inoperative timer.	Test timer and replace if inoperative.
* Inoperative temperature switch.	Test switch and replace if inoperative.
Inoperative pressure switch.	Test switch and replace if inoperative.
Clogged pressure hose.	Remove and clean or replace hose.
Broken, loose, or incorrect wiring.	Refer to Wiring Diagram.
† Inoperative electronic control.	Refer to SECTION VII to check out the electronic control operation.

41. NO COLD WATER.

POSSIBLE CAUSE	TO CORRECT
Cold water supply faucet is closed	Open faucet.
Kinked cold water inlet hose.	Straighten or replace hose.
Clogged mixing valve screen, or screen in outer end of inlet hose nearest water supply faucet.	Disconnect cold water inlet hose, and clean or replace screen.
Inoperative cold water mixing valve solenoid.	Test solenoid and replace if inoperative.
* Inoperative timer.	Test timer and replace if inoperative.
* Inoperative temperature switch.	Test switch and replace if inoperative.
Inoperative pressure switch.	Test switch and replace if inoperative.
Clogged pressure hose.	Remove and clean or replace hose.
Broken, loose, or incorrect wiring.	Refer to Wiring Diagram.
† Inoperative electronic control.	Refer to SECTION VII to check out the electronic control operation.

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

42. NO WARM WATER

POSSIBLE CAUSE	TO CORRECT
No hot water.	Refer to *pargraph 40.*
No cold water.	Refer to *paragraph 41.*

43. WATER FILL DOES NOT STOP AT PROPER LEVEL.

POSSIBLE CAUSE	TO CORRECT
Inoperative pressure switch.	Test switch and replace if inoperative.
Air leak in pressure hose.	Replace hose.
Sediment on or under mixing valve diaphragm, defective diaphragm, or armature binding in armature guide.	Disassemble and clean mixing valve. Replace deteriorated or not easily cleaned components. Refer to Parts Section in this manual for assembly sequence of valve.
Broken, weak or missing mixing valve armature spring	Disassemble valve and replace spring. Refer to Parts Section in this manual for assembly sequence of valve.
A siphoning action started in washer will cause water to be siphoned from the washer during the cycle due to the end of the drain hose being lower than cabinet top of washer. Drain hose fits tight in standpipe or drain.	Install No. 386P3 Siphon Break Kit. Provide an air gap around drain hose and drain receptacle.
Water in pressure hose.	Blow air through hose to remove water.
Broken, loose, shorted or incorrect wiring.	Refer to Wiring Diagram.
† Inoperative electronic control.	Refer to SECTION VII to check out the electronic control operation.

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

POSSIBLE CAUSE	TO CORRECT
Timer is designed to pause during fill periods.	Allow completion of fill period.
Inoperative timer.	Test timer, and replace if inoperative.
Loading door is open.	Close loading door. Loading door MUST be closed any time the washer is to agitate or spin.
Washer will not fill	Timer pauses until pressure switch is satisfied. Refer to *paragraphs 40 and 41.*
Timer motor lead wire off timer terminal.	Refer to Wiring Diagram and reattach wire.
Broken, loose, or incorrect wiring.	Refer to Wiring Diagram.

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

45. NO AGITATION

POSSIBLE CAUSE	TO CORRECT
* Inoperative timer. Timer is designed to pause (SOAK) during the DELICATE cycle.	Test timer 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 Wiring Diagram.
Loose or broken drive belt.	Adjust or replace belt.
Inoperative transmission assembly.	Repair or replace the transmission assembly.
Sheared motor pulley roll pin.	Remove drive motor, and replace roll pin and any other damaged parts.
Drive motor overload protector has cycled.	Refer to *paragraph 49.*
Bind in pump.	Replace pump.
Loading door is open or door switch is inoperative.	Close door or test switch and replace if inoperative.
† Inoperative electronic control.	Refer to SECTION VII to check out the electronic control operation.

46. CONSTANT AGITATION.

POSSIBLE CAUSE	TO CORRECT
* Inoperative timer.	Test timer and replace if inoperative.
Inoperative drive motor.	Test motor and replace if inoperative.
Shorted or incorrect wiring.	Refer to Wiring Diagram.
Inoperative transmission assembly.	Repair or replace the transmission assembly.
† Inoperative electronic control.	Refer to SECTION VII to check out the electronic control operation.

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

47. SLOW SPIN OR NO SPIN

POSSIBLE CAUSE	TO CORRECT
* Inoperative timer.	Test timer and replace if inoperative.
* Some model washers, the timer is programmed for SLOW spin in the DELICATE CYCLE regardless of the action switch setting.	Use a different cycle.
Loading door is open or door safety switch is inoperative.	Close loading door, or test switch and replace if inoperative.
Bind in water pump.	Replace pump.
Inoperative drive motor.	Test motor and replace if inoperative.
Loose or broken drive belt.	Adjust or replace spin belt.
* Washer has gone OUT-OF-BALANCE. † LED (Light Emitting Diode) is flashing on the electronic control.	Open loading door to reset OUT-OF-BALANCE switch. Rearrange the load in the washtub.
No clearance or stuck brake pads.	Free sticky brake pads or replace pads.
Broken, loose, or incorrect wiring.	Refer to Wiring Diagram.
Inoperative transmission assembly.	Repair or replace the transmission assembly.
† Inoperative electronic control.	Refer to SECTION VII to check out the electronic control operation.

48. CONSTANT SPIN.

POSSIBLE CAUSE	TO CORRECT
* Inoperative timer.	Test timer and replace if inoperative.
Inoperative drive motor.	Test motor and replace if inoperative.
Washtub does not stop spinning within seven seconds after the loading door is opened.	Replace brake pads.
Excessive wear on brake pads, or missing brake pads.	Replace brake pads.
Shorted or incorrect wiring.	Refer to Wiring Diagram.
† Inoperative electronic control.	Refer to SECTION VII to check out the electronic control operation.

49. DRIVE MOTOR OVERLOAD PROTECTOR CYCLES REPEATEDLY.

POSSIBLE CAUSE	TO CORRECT
Excessive belt tension.	Adjust belts.
Inoperative motor overload protector.	Replace motor.
Bind in upper or lower bearing.	Replace bearing.
Bind in water pump.	Replace pump.
Bind in transmission.	Repair or replace transmission.
Brake pads binding.	Free binding pads, or replace pads.
Incorrect voltage.	Contact the local utility company, or have a qualilfied electrician check the power supply.

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

50. OUTER TUB DOES NOT EMPTY.

POSSIBLE CAUSE	TO CORRECT
Kinked drain hose.	Straighten hose.
Drain hose off drain hose support.	Remove washer front panel and install drain hose on hose support.
Inoperative water pump.	Replace pump.
Obstruction in outer tub outlet hose.	Remove obstruction.
Loose or broken pump belt.	Adjust or replace belt.

51. 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 located in center notch.
Washer is not properly leveled.	Adjust leveling legs.
Washer is installed on weak, "spongy", carpeted or built-up floor.	Relocate washer, or support floor to eliminate weak or "spongy" condition.
Incorrect or loose cabinet screws	Replace with correct screws or tighten.
Base damaged (washer was dropped).	Replace base assembly.
Balance ring not positioned properly on transmission assembly.	Refer to *paragraph 32.*

52. WATER LEAKING FROM OUTER TUB.

POSSIBLE CAUSE	TO CORRECT
Leaking water seal in outer tub.	Replace hub and seal kit assembly, *paragraph 26.*
Hole in outer tub.	Replace outer tub.
Pressure hose or accumulator leaking.	Replace pressure hose and/or accumulator.
Outer tub cover gasket leaking.	Replace gasket.
Obstruction in drain causing water to come over top of outer drain tub cover.	Remove obstruction.
Tub-to-pump hose leaking at clamp.	Tighten clamp.

SECTION VI
Test Procedures

To check continuity through motor harness and motor. The items within the parenthesis 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 parenthesis.

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

SECTION VII
Service Procedures Unique to the Electronic Control Model Washers

53. ELECTRICAL REQUIREMENTS

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

NOTE: The wiring diagram is located in the control hood or on the backside of the washer front panel.

⚠ WARNING

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

- The washer is designed to be operated on a separate branch, polarized, three-wire, effectively grounded, 120 Volt, 60 Hertz, AC (alternating current), single phase electrical circuit protected by a **15 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 Volts AC (alternating current).
- **Do not operate other appliances on the same circuit. Do not overload circuits!**

⚠ 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.

54. 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 **local code permits** its use, connect an external ground wire (18 gauge minimum—available at your local hardware store). Connect one end of the wire under any screw (located at rear of washer) and other end to a known effective electrical ground.
- If your home's electrical supply does not meet the above specifications and/or if you are not sure your home has an effective ground, have a qualified electrician, or your local electrical utility company check it and correct any problems.

55. WASHERS EQUIPPED WITH ELECTRONIC CONTROL

After connecting the washer to the electrical supply, start the washer (refer to the OPERATING INSTRUCTIONS supplied with the washer). If the electronic control flashes, (with the loading door closed) 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.

56. WASHER OPERATION

Close the loading door. The washer will not agitate or spin with the loading door open.

NOTE: If the loading door is opened while the washer is filling with water, the water flow will stop for about three seconds, then the water fill will continue.

Select the LOAD SIZE WATER LEVEL. If agitation has started and a higher water level is desired, move the control to RESET, then make your water level selection.

NOTE: When the control is released, it should not remain at the RESET position.

IMPORTANT: Holding the LOAD SIZE WATER LEVEL control lever in the RESET position can cause flooding of the washer.

Press one of the cycle selection pads to select a cycle which is appropriate for the type of fabric being washed: REGULAR, PERM PRESS, DELICATES, KNITS or SOAK. These are automatic, preprogrammed cycles.

Select desired cycle options by pressing the various pads to the right of the STATUS LIGHTS. See CUSTOMIZING CYCLES for detailed information.

Press the GO pad. Washer will start immediately and stop automatically when the cycle has completed. Washer will not start until the GO pad is pressed.

The washer will stop (pause) for a brief period of time before the wash and rinse spins.

57. AUTOMATIC PREPROGRAMMED CYCLES

By selecting the appropriate ON/SELECT pad, Automatic, Preprogrammed cycles are available in REGULAR, PERM PRESS, DELICATES, KNITS and SOAK. In these cycles, warm water wash, cold water rinse and a normal amount of agitation time are automatically selected for you (see *below*). The model of your washer will determine which of these cycles are available.

NOTE: When you have selected a cycle, you will see a number light up in the display area. This number indicates the length of the wash cycle. When the GO pad is pressed, you will see the display change to a higher number. This higher number tells you the length of the entire cycle, excluding water fills. When the SOAK cycle is selected, the number in the display area represents the total soak time. When the GO pad is pressed, this number increases to include agitation and spin times representing the total cycle time.

IMPORTANT: The DELICATES and KNITS cycles are comprised of a series of intermittent pause and agitation periods which vary in length of time.

	Soil	Wash Temp.	Wash Time		Rinse/Spin Time	Total Time
REGULAR	Normal	Warm	10	+	17	27
PERM PRESS	Normal	Warm	8	+	14	22
DELICATES	Normal	Warm	7	+	10	17
KNITS	Normal	Warm	8	+	11	19
SOAK	Normal	Warm	30 (Soak)		10 (Agitate & Spin)	40

Automatic Cycle Times (In Minutes)

58. STATUS LIGHTS

The STATUS lights illuminate to show you at a glance what is happening inside the washer.

Wash Lights up during the wash portion of the cycle.

Rinse Lights up during the rinse portion of the cycle.

Spin Lights up during the final spin.

Filter Flashes whenever the lint filtering system is activated.

Soak Lights up whenever the load is soaking. Also, lights up during the soak portion of the SOAK cycle.

Wash and Soak Both light up during the wash portion of the DELICATES and KNITS cycles and during periods of soaking.

59. OTHER FEATURES

Digital Display
Shows you the length of the wash cycle you have selected and counts down the number of minutes (excluding water fills) remaining the cycle. The display also shows the number of hours remaining during the DELAYED START countdown on those models equipped with DELAYED START.

Flashing Digital Display Light
Tells you the GO pad must be pressed in order to continue the cycle. Close the washer loading door. The washer will not run with the loading door open.

Flashing Digital Display Light and Signal
Load is out-of-balance. Open the loading door, redistribute load and close loading door. Press the GO pad. Washer will continue with the cycle.

GO
Press the GO pad to start washer. Washer will not run until the GO pad is pressed.

STOP
Press the STOP pad to stop washer at any point in the cycle. Washer will stop and remain at that portion of the cycle until the GO pad is pressed. At that time, the cycle will continue where it left off.

Pressing the STOP pad two times in succession will cancel the cycle.

RESET
The RESET pad functions the same as the STOP pad. Pressing it once stops the washer, pressing it two times in succession cancels the cycle.

60. CUSTOMIZING PREPROGRAMMED CYCLES

Your washer may or may not have all of the following selections. The model of washer you own will determine which features are available.

All preprogrammed cycles can be customized to fit your laundering needs. First select a cycle, then customize. The control "wakes up" only after a cycle has been selected.

WASH Time
When a cycle is selected, the NORMAL SOIL LEVEL is automatically provided. The number of minutes in the wash portion of the cycle on the NORMAL SOIL LEVEL setting appears in the digital display area. This wash time can be increased or decreased by using the SOIL LEVEL pads.

SOIL LEVEL Pads
EXTRA HEAVY, HEAVY, NORMAL or LIGHT pads will control the length of the wash cycle.

Each SOIL LEVEL pad provides a range of several minutes. For instance; press the HEAVY pad and a number will appear in the display area. Press HEAVY again and the time will increase by one minute (see *below*).

	LIGHT	NORMAL	HEAVY	EXTRA HEAVY
REGULAR	6 - 9	10 - 12	13 - 15	16 - 18
PERM PRESS	4 - 7	8 - 10	11 - 13	14 - 16
DELICATES	5 - 6	7 - 8	9 - 10	11 - 12
KNITS	6 - 7	8 - 9	10 - 11	12 - 13
SOAK	15 - 25	30 - 40	45 - 55	60 - 85

Programmed Soil Level Times

WASH Temperatures
When a cycle is selected, a warm wash and a cold rinse is automatically provided.

To select a hot wash, press the HOT WASH TEMP pad. Not all fabrics can be washed safely in hot water.

You **WILL NOT** be able to program a hot wash on either the DELICATES or KNITS cycles.

A warm wash cycle can be selected by pressing the WARM WASH TEMP pad.

A cold wash can be selected by pressing the COLD WASH TEMP pad.

WARM RINSE
A warm rinse can be selected by pressing the WARM RINSE pad. A warm rinse can cause wrinkling in some garments, a warm rinse can be selected only when the REGULAR cycle is used. Your washer will not accept a warm rinse in any other cycle.

EXTRA RINSE
An extra rinse can be obtained by pressing the EXTRA RINSE pad. If a warm rinse has been selected, both rinses will be warm. An extra rinse is not available in the SOAK cycle.

NOTE: When EXTRA RINSE is selected, the final spin of the NORMAL cycle will be three minutes. After the three minute spin, a deep rinse will begin, followed by the normal final spin time for the cycle selected.

SIGNAL
A signal is provided to let you know when the cycle has been completed. The signal has three distinctive tone levels. Pressing the SIGNAL pad once will produce the softest tone. Press the pad again and the tone will get louder. Pressing the pad a third time will result in setting the loudest tone. To turn the signal off, press the pad repeatedly until the SIGNAL light goes off. The signal will not sound if the light is off.

MEMORY SAVE
You can create and save your favorite cycles by using the MEMORY SAVE option. Each programmed cycle — REGULAR, PERM PRESS, DELICATES, KNITS and SOAK can have one memory cycle for a total of five memory or favorite cycles in addition to the preprogrammed cycles.

To save a favorite cycle, first select a program cycle, then customize that cycle. When all selections have been made, press the MEMORY SAVE pad. Your favorite cycle is now saved. This cycle will be stored until you either change the cycle or until there is a power outage of several seconds or longer. Your customized cycle can be recalled from memory by pressing the appropriate ON/SELECT pad for the cycle twice in succession.

The light on the MEMORY SAVE pad will light up when the memory cycle is on.

To change a memory cycle, press the programmed cycle selection pad twice to recall the memory cycle. Change the cycle, then press the MEMORY SAVE pad. The old memory cycle will be deleted and the new cycle memorized in its place.

NOTE: The SIGNAL and DELAYED START cannot be saved in memory.

DELAYED START
When using DELAYED START, make sure the water faucets have been turned on or the washer will not start after the time has counted down.

You can set your washer to delay starting from one to nine hours.

Select a programmed or memory cycle.

Press the DELAYED START pad. At this point you will see a number and an "h" appear in the display area. This tells you in how many hours the washer will start. Press the DELAYED START pad until the desired number of hours appears.

Press the GO pad.

The "hours to go" number will remain lit while the "h" flashes. The flashing "h" tells you the washer has started to count down the time.

When the selected number of hours has passed, the washer will start and perform the cycle you selected.

Pressing ADVANCE will cancel the DELAYED START option.

Pressing the RESET or STOP pad twice will cancel the DELAYED START option. It will also cancel the entire cycle as well.

AUTO PREWASH
Prewash items which are heavily soiled or stained. Add detergent. Put clothes in washer. Place the dispenser on the agitator. Add liquid detergent diluted with water (no more than one cup total volume) to the dispenser.

After the PREWASH cycle has finished, the washer will automatically continue to the selected cycle (either REGULAR or PERM PRESS). The detergent added to the washtub is used during the PREWASH cycle. The detergent in the dispenser is automatically released for use in the REGULAR or PERM PRESS cycle. Your washer knows that longer periods of agitation could damage delicates and some knits, so it WILL NOT allow AUTO PREWASH to be programmed with the KNITS or DELICATES cycles.

Wash Temperature Selected	HOT	WARM	COLD
Prewash Temperature Will Be	WARM	WARM	COLD

NOTE: Rinse the dispenser thoroughly after it has been used to dispense detergent.

ADVANCE
The ADVANCE option removes the time from a cycle, starting at the beginning of the cycle. The ADVANCE pad moves you quickly through a selected cycle in one or five minute increments. By watching the STATUS lights while using ADVANCE, you can see to which area in the cycle you have advanced.

TO USE ADVANCE. . .select a cycle. Press the ADVANCE pad. You will notice the total cycle time will be displayed when the ADVANCE pad is pushed. Pressing the pad momentarily will advance the cycle one minute at a time. Holding the pad down will advance the time in five minute increments.

If the washer is running and ADVANCE is pressed, the washer will stop and allow you to advance through the cycle. The GO pad must then be pressed to start or continue the cycle.

61. TROUBLESHOOTING ELECTRONIC CONTROL

IMPORTANT: This procedure is intended to be used as an aid in diagnosing potential problems with the electronic control. Refer to SECTION V (Service Helps) for diagnosing problems with components other than the electronic control.

62. DIAGNOSTIC CYCLE

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

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

The diagnostic cycle is used in conjunction with a self-diagnostic routine chart located on the wiring diagram sticker. To begin the diagnostic cycle follow the flow chart on Page 58.

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

Self-Diagnostic Routine

Entry: Follow the sequence given below.

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

Exit: Do any of the following.

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

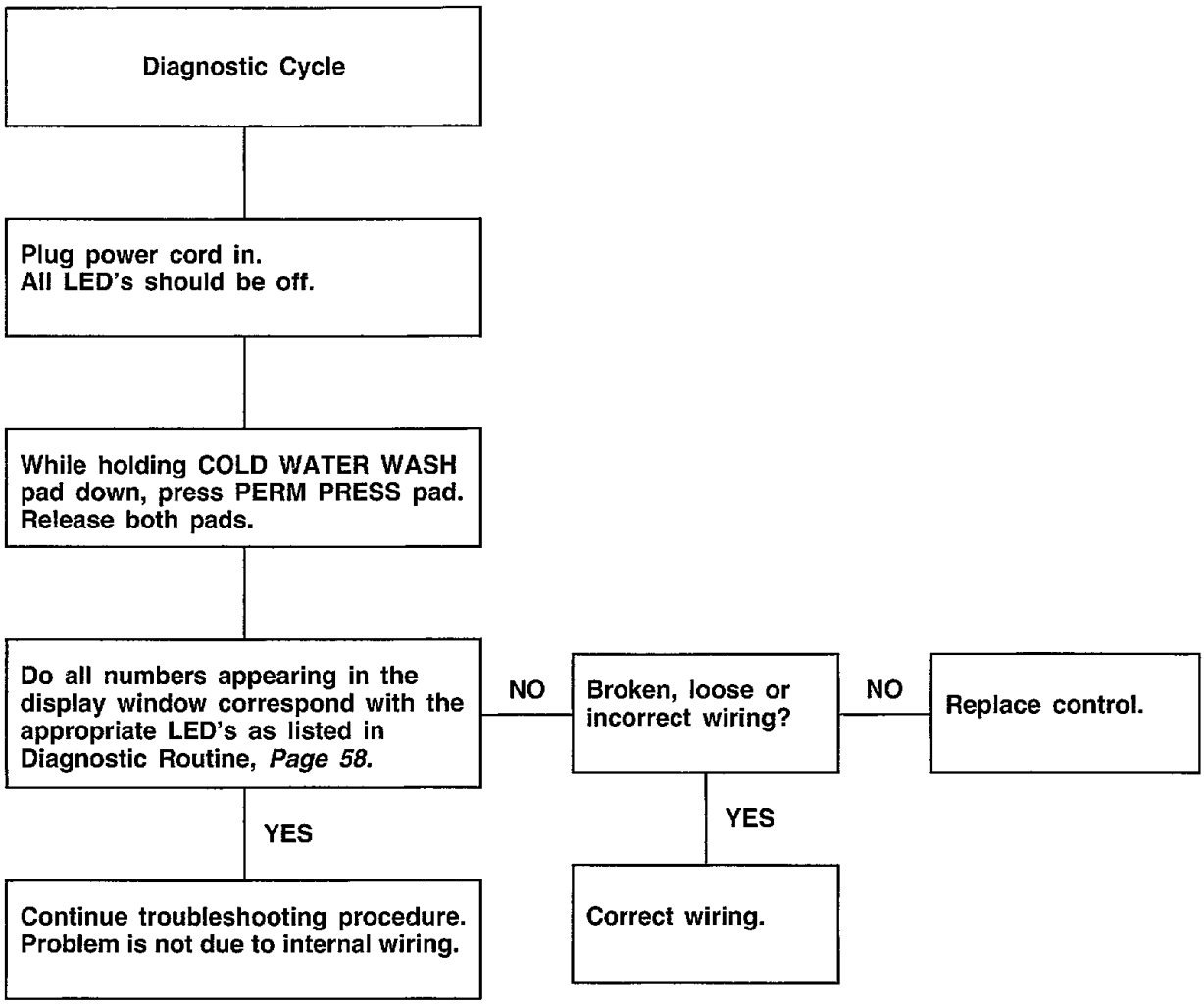
NOTE:
1. **This test routine will only light the LED's pertaining to the hardware model selected.**
2. **When the last step in the table is finished the routine sequence will repeat.**
3. **Each output is on for two seconds.**

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

* None (All off)

Diagnostic Routine

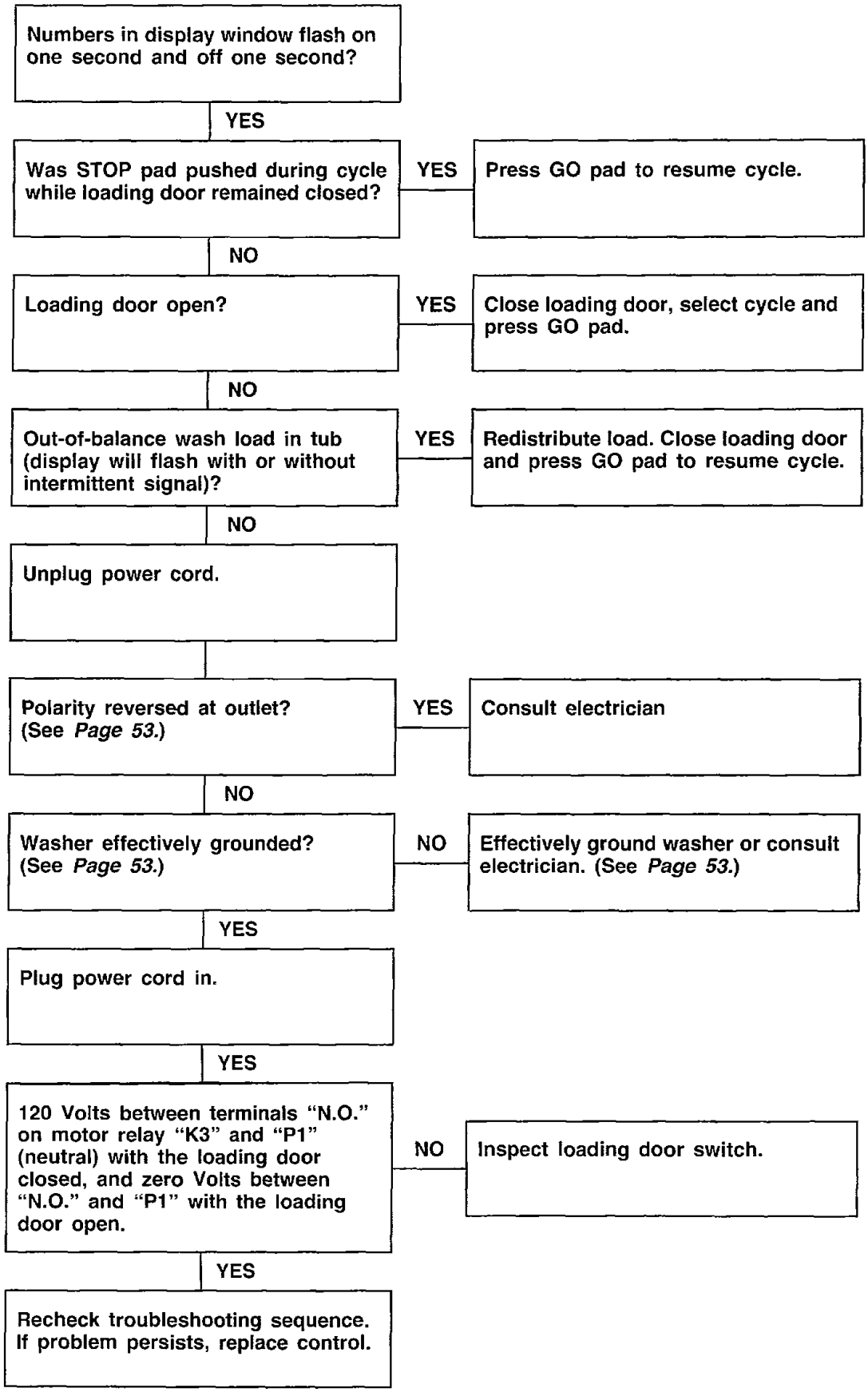
63. FAILURE SYMPTOMS



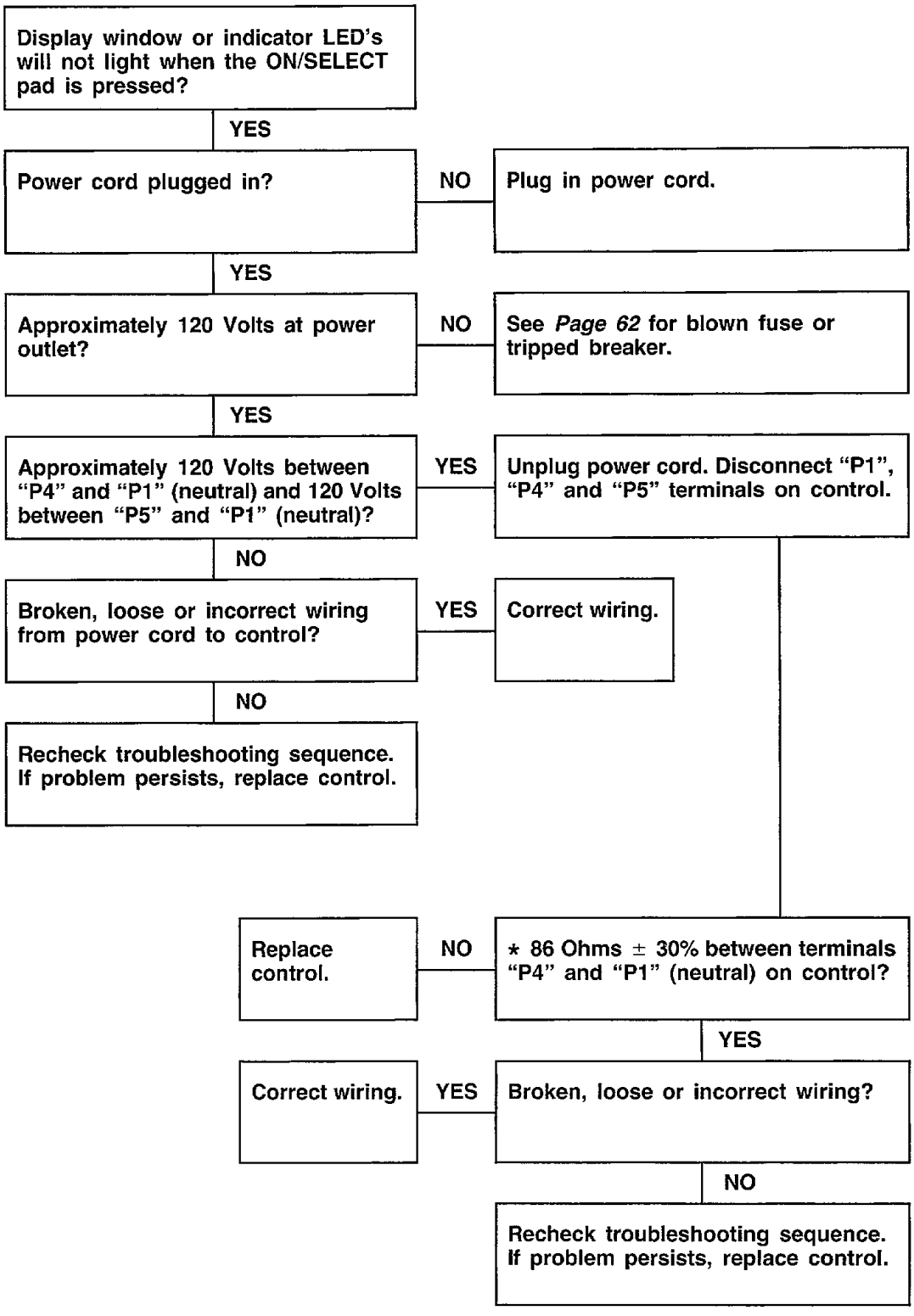
NOTE: If when trying to start Diagnostic Cycle, LED display flashes but does not start, check the following:

1. Is loading door closed?
2. Loading door switch operating correctly?
3. Is washer plugged into properly polarized outlet and washer effectively grounded? See *Page 53.*

64. SYMPTOM: FLASHING DISPLAY

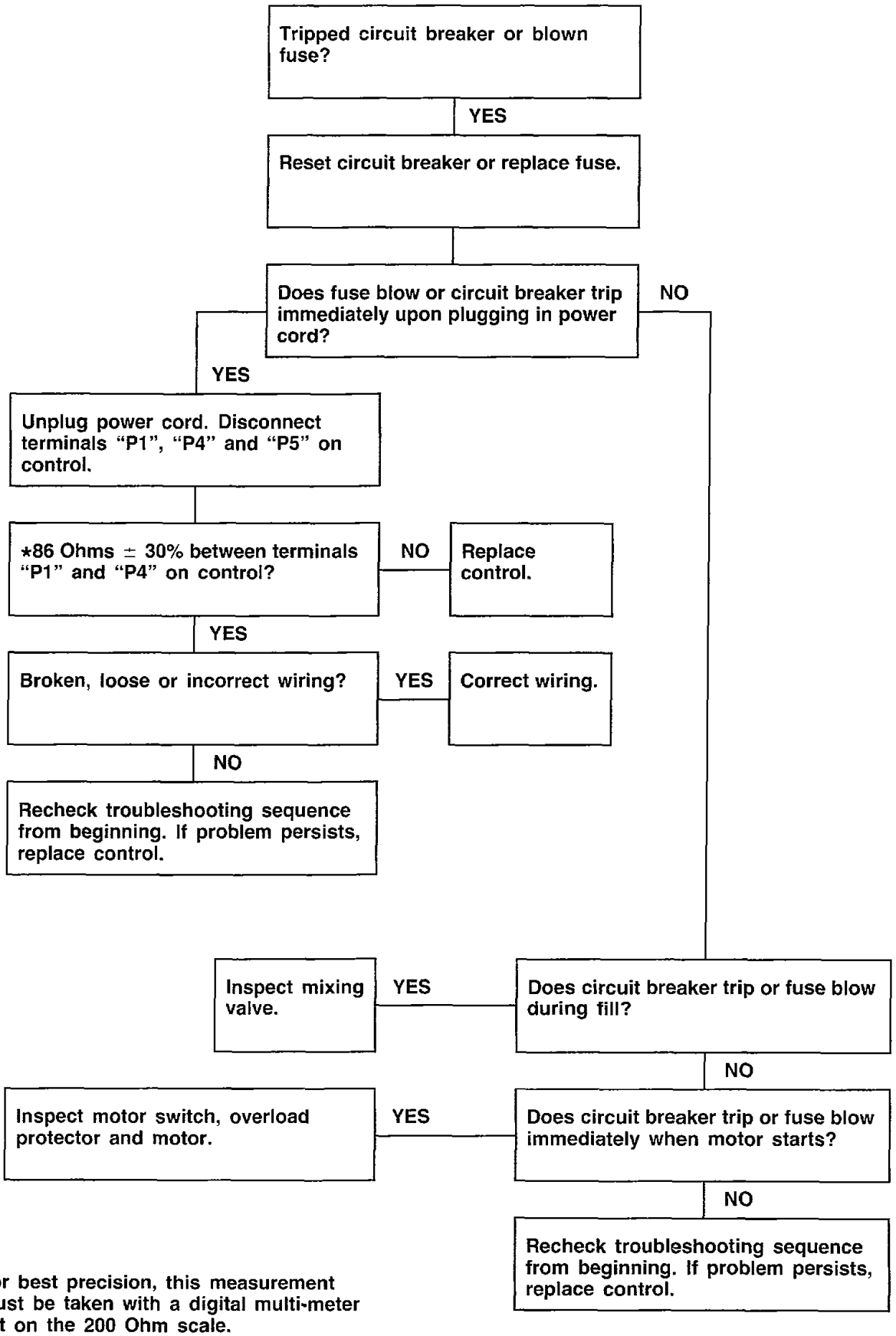


65. SYMPTOM: INDICATOR LED's WILL NOT LIGHT WHEN ON/SELECT PAD IS PRESSED



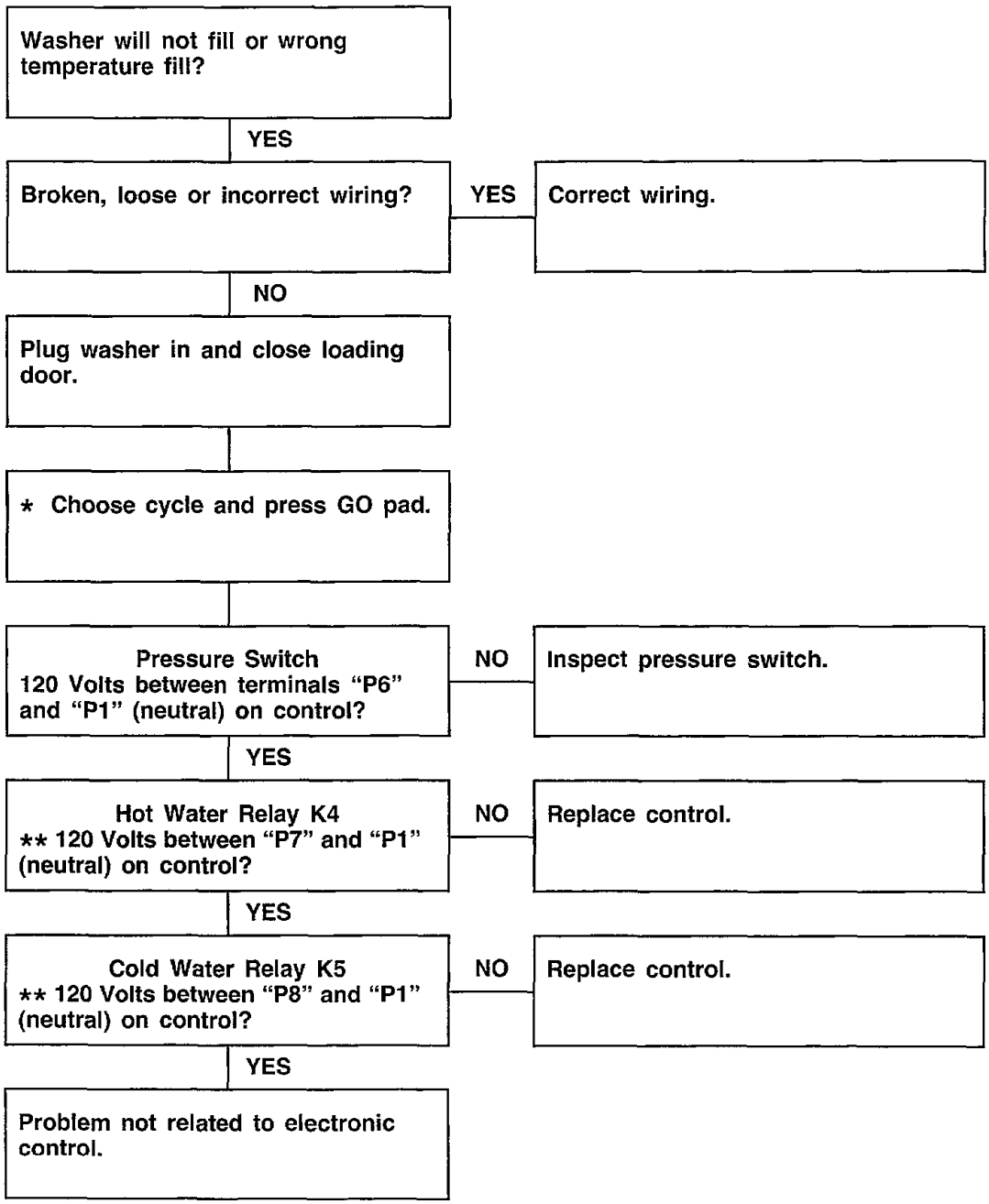
* For best precision, this measurement must be taken with a digital multi-meter set on the 200 Ohm scale.

66. 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.

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

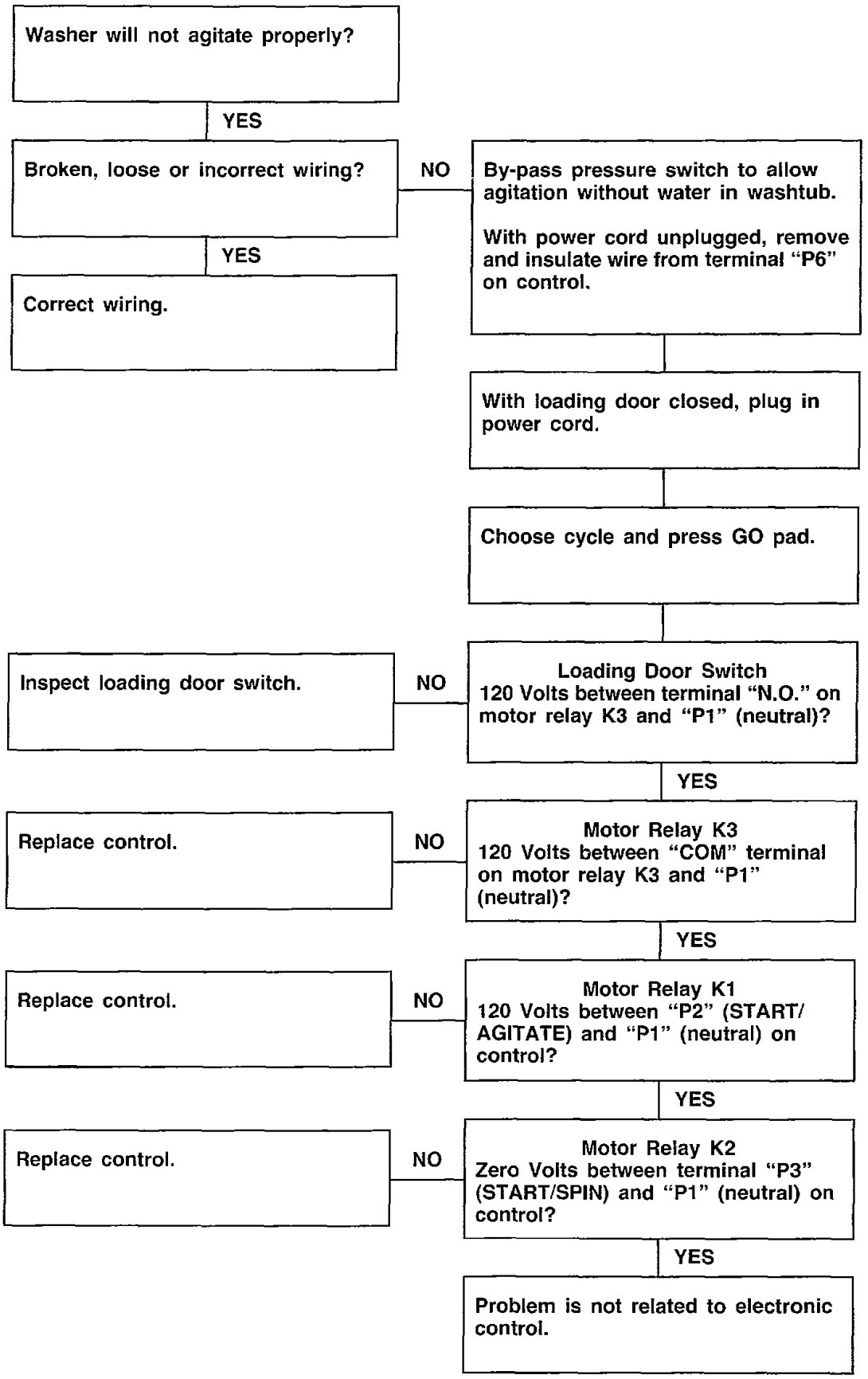


Select Extra-Large load size.

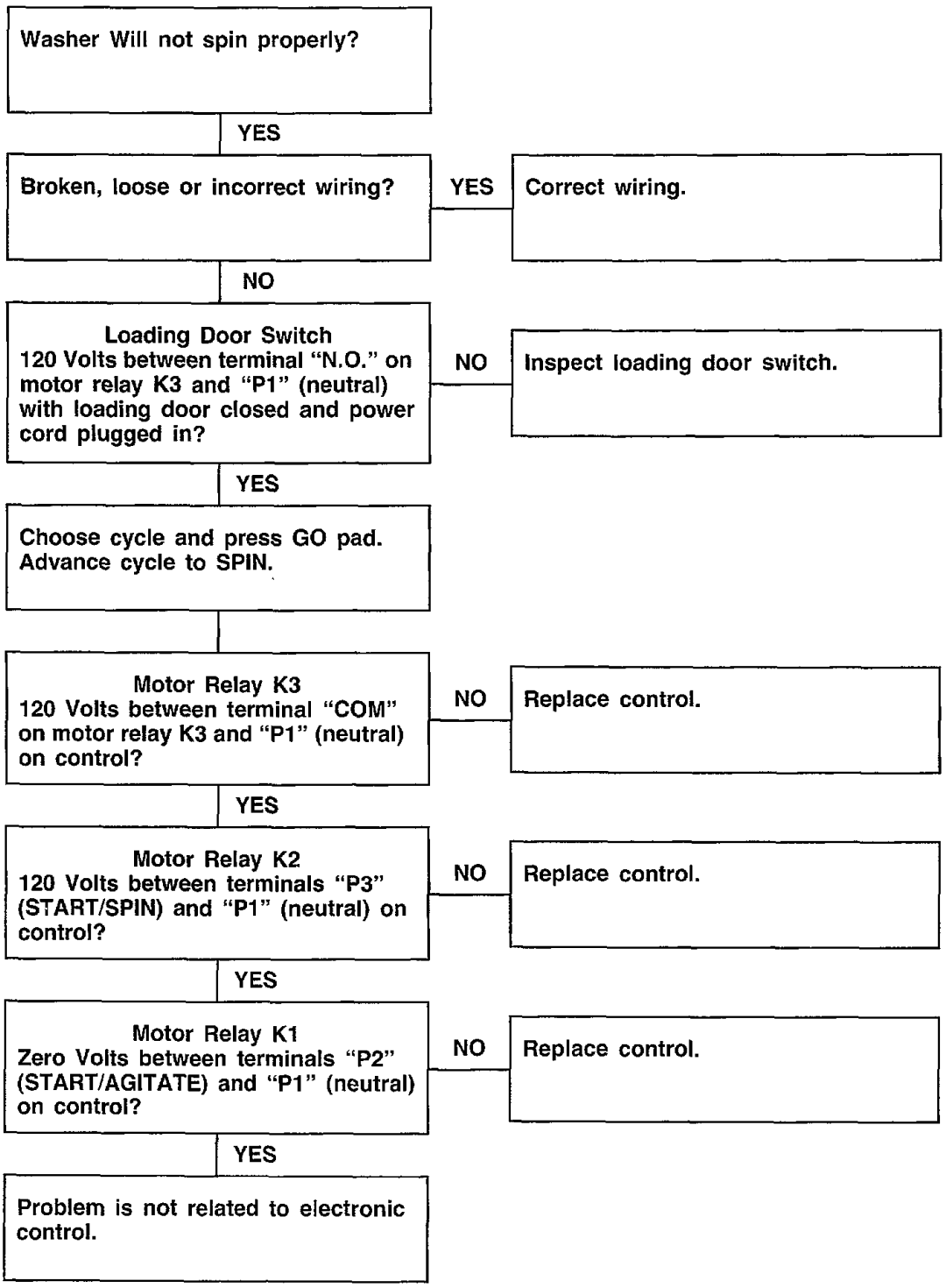
* Make sure washtub is empty when choosing cycle to insure that pressure switch has reset. Use ADVANCE pad to advance cycle to SPIN if necessary.

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

68. SYMPTOM: WASHER WILL NOT AGITATE PROPERLY



69. SYMPTOM: WASHER WILL NOT SPIN PROPERLY



70. CONTROL REPLACEMENT

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

To replace the control, first unplug the washer. Remove all of the wires connected to the control and take out the four screws securing the control to the control hood. When removing wires from the control, hold down on the board near the appropriate terminal, and disconnect the wires using a pliers. Do not pull on wires.

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

It is important to take care when handling the original control. It must be carefully placed in the anti-static wrapping and the anti-static foam which was removed from the new control. A copy of the checklist, shown on *Page 67*, must be completely filled out and returned with the control. Warranty credit will not be issued if the control is not wrapped properly.

Electronic Control Board Replacement Report

Installation Date: _____ Date Failed: _____

Model No.: _____ Serial No.: _____

Service Company Identification No.: _____

1. What was the customer's complaint?

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

Washer Control Failure

☐ **Failure in Diagnostic Cycle**

Transformer:
☐ Resistance not in 60-112 ohm range between P4 and P1?

Hot water Relay K4:
☐ 120 Volts not found between P7 and P1 in hot fill?

Cold Water Relay K5:
☐ 120 volts not found between P8 and P1 in cold fill?

Main Motor Relay K3:
☐ 120 volts not found between "Com" and P1 in agitation?

☐ 120 volts not found between "Com" and P1 in spin?

Agitation Relay K1:
☐ 120 volts not found between P2 and P1 in agitation?

☐ 120 volts found between P2 and P1 in spin?

Spin Relay K2:
☐ 120 volts not found between P3 and P1 during spin?

☐ 120 volts found between P3 and P1 during agitation?

Dryer Control Failure

☐ **Failure in Diagnostic Cycle**

Transformer:
☐ Resistance not in 116-216 ohm range between P3 and "Com"?

Motor Relay K1:
☐ 120 volts not found between P1 and P3?

Heat Relay K2:
☐ With P5 and P1 disconnected, 120 volts not found between "N.O." and P3?

☐ Zero ohms found between "Com" and "N.O." (with dryer unplugged)?

Temperature Regulating Circuit:
☐ SH appears in the display window when the exhaust temperature is less than 175° F?

Additional Comments:

Both copies of this form must be completed and returned with the control board.

Warranty is void if control board is returned improperly packed or damaged.

Form No. 8024R1

SECTION VIII
Cycle Sequence Charts

NOTE: Times listed are approximate.

CYCLE	FUNCTION		WATER TEMP.	*MOTOR SPEED	EATON TIMER TIME (MIN. & SEC.)	EATON TIMER DEGREES	MALLORY TIMER TIME (MIN. & SEC.)	MALLORY TIMER DEGREES
REGULAR 33:58 PLUS FILL	WASH FILL or AGITATE		H,W,C	FAST	15:00	82.25	15:00	82.91
	PAUSE			FAST	1:14	6.76	1:13	6.72
	SPIN			FAST	1:30	8.23	1:30	8.29
	SPIN and SPRAY		COLD	FAST	1:00	5.48	1:00	5.53
	SPIN			FAST	1:30	8.23	1:30	8.29
	PAUSE			FAST	:18	1.65	:17	1.57
	RINSE FILL (Timer Motor Runs)		W or C	FAST	:44	4.02	:44	4.05
	PAUSE or FILL		W or C	FAST	:12	1.10	:12	1.11
	RINSE FILL or AGITATE		W or C	FAST	5:00	27.42	5:00	27.63
	PAUSE			FAST	1:14	6.76	1:13	6.72
	SPIN			FAST	7:00	38.39	6.47	37.49
OFF					2:00	10.97	2:09	10.96
PERMANENT PRESS 26.13 PLUS FILL	WASH FILL or AGITATE		H,W,C	FAST	9:00	49.35	9:00	49.74
	PAUSE			FAST	1:14	6.76	1:13	6.72
	COOL DOWN	SPIN (Partial Drain)		SLOW	:45	4.11	:45	4.15
	(Press Sw. Controlled)	FILL	COLD		Variable		Variable	
	PAUSE				:55	5.03	:50	4.61
	SPIN			SLOW	1:25	7.77	1:25	7.83
	SPIN and SPRAY		COLD	SLOW	:45	4.11	:45	4.15
	SPIN			SLOW	1:30	8.23	1:30	8.29
	PAUSE				:18	1.65	:17	1.57
	RINSE FILL (Timer Motor Runs)		W or C		:44	4.02	:44	4.05
	PAUSE or FILL		W or C		:12	1.10	:12	1.11
	RINSE FILL or AGITATE		W or C	FAST	3:00	16.45	3:00	16.58
	PAUSE				1.14	6.76	1:13	6.72
	SPIN			FAST	5:55	32.44	5.50	32.24
OFF					2:00	10.97	1:59	10.96
	TOTALS				65.39	360.00	65.08	360.00

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

KEY:
H = HOT
W = WARM
C = COLD

Timer No. 31238 Cycle Sequence (Two Cycle)

NOTE: Times listed are approximate.

CYCLE	FUNCTION		WATER TEMP.	TIME
REGULAR	FILL		H,W,C	Variable
	AGITATE			† 6:00-15:00
	PAUSE			:10
	SPIN			1:30
	SPRAY and SPIN		C	2:00
	SPIN			2:00
	RINSE FILL		W,C	Variable
	AGITATE			4:00
	PAUSE			:10
	SPIN			7:00
PERMANENT PRESS	FILL		H,W,C	Variable
	AGITATE			† 4:00-13:00
	PAUSE			:10
	COOL DOWN	SPIN		Variable
		FILL	C	Variable
		AGITATE		:30
		PAUSE		:10
		SPIN		1:30
		SPRAY and SPIN	C	1:00
		SPIN		1:20
	FILL		C	Variable
	AGITATE			3:00
	PAUSE			:10
	SPIN			6:00
DELICATES/KNITS	FILL		W,C	Variable
	PAUSE			1:00
	AGITATE			:30
	PAUSE			† :30-5:30
	AGITATE			:30
	PAUSE			1:30
	AGITATE			:40
	PAUSE			:20
	SPIN			:40
	SPIN and SPRAY		C	:40
	SPIN			1:20
	RINSE FILL		C	Variable
	AGITATE			:20
	PAUSE			:40
	AGITATE			:20
	PAUSE			:40
	SPIN			5:00

† TIME WILL VARY DEPENDING ON SELECTION.

KEY:
H - HOT
W - WARM
C - COLD

Electronic Control No. 31306 Cycle Sequence (Three Cycle)

CYCLE	FUNCTION		WATER TEMP.	TIME
REGULAR	FILL		H,W,C	Variable
	AGITATE			†6:00-18:00
	PAUSE			:10
	SPIN			1:30
	SPRAY and SPIN		C	2:00
	SPIN			2:00
	RINSE FILL		W,C	Variable
	AGITATE			4:00
	PAUSE			:10
	SPIN			**7:00
	* EXTRA RINSE	RINSE FILL	W,C	Variable
		AGITATE		4:00
		PAUSE		:10
		SPIN		7:00
PERMANENT PRESS	FILL		H,W,C	Variable
	AGITATE			†4:00-16:00
	PAUSE			:10
	COOL DOWN	SPIN		Variable
		FILL	C	Variable
		AGITATE		:30
		PAUSE		:10
		SPIN		1:30
		SPRAY and SPIN	C	1:00
		SPIN		1:20
	FILL		C	Variable
	AGITATE			3:10
	PAUSE			:10
	SPIN			**6:00
	* EXTRA RINSE	RINSE FILL	C	Variable
		AGITATE		3:10
		PAUSE		:10
		SPIN		6:00

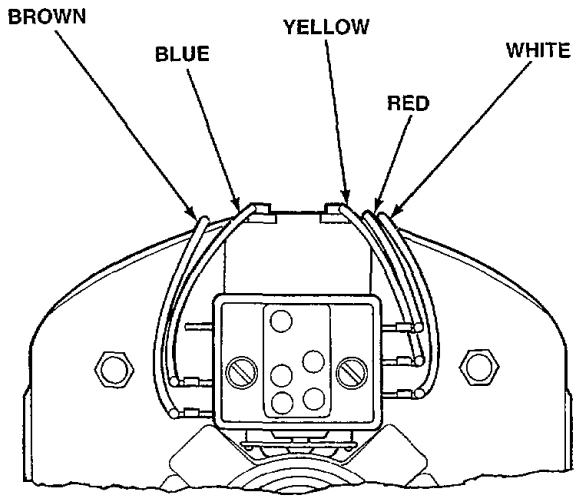
CYCLE	FUNCTION		WATER TEMP.	TIME
DELICATES	FILL		W,C	Variable
	INTERMITENT AGITATION			† 5:00-12:00
	SPIN			:40
	SPRAY and SPIN		C	:40
	SPIN			1:20
	RINSE FILL		C	Variable
	AGITATE			:20
	PAUSE			:40
	AGITATE			:20
	PAUSE			:40
	SPIN			**5:00
	* EXTRA RINSE	RINSE FILL	W,C	Variable
		AGITATE		:20
		PAUSE		:40
		AGITATE		:20
		PAUSE		:40
		SPIN		5:00
KNITS	FILL		W,C	Variable
	INTERMITENT AGITATION			†6:00-13:00
	COOL DOWN	SPIN		Variable
		FILL	C	Variable
		AGITATE		:30
		PAUSE		:10
		SPIN		:40
		SPRAY and SPIN	C	1:00
		SPIN		1:20
	FILL		C	Variable
	AGITATE			:20
	PAUSE			:40
	AGITATE			:20
	PAUSE			:40
	SPIN			**5:00
	* EXTRA RINSE	FILL	C	Variable
		AGITATE		:20
		PAUSE		:40
		AGITATE		:20
		PAUSE		:40
		SPIN		5:00

* FUNCTION ONLY ENTERS CYCLE WHEN SELECTED–IF AVAILABLE.
† TIME WILL VARY DEPENDING ON SELECTION.
** THIS TIME WILL BE 3:00 WHEN EXTRA RINSE IS SELECTED.

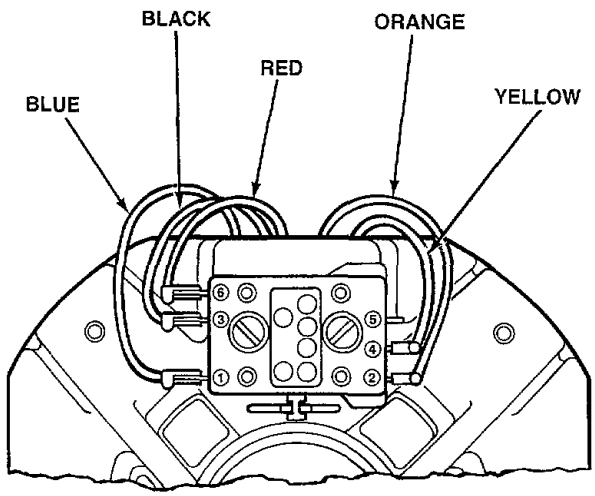
KEY:
H = HOT
W = WARM
C = COLD

Electronic Control No. 31305 Cycle Sequence (Four Cycle)

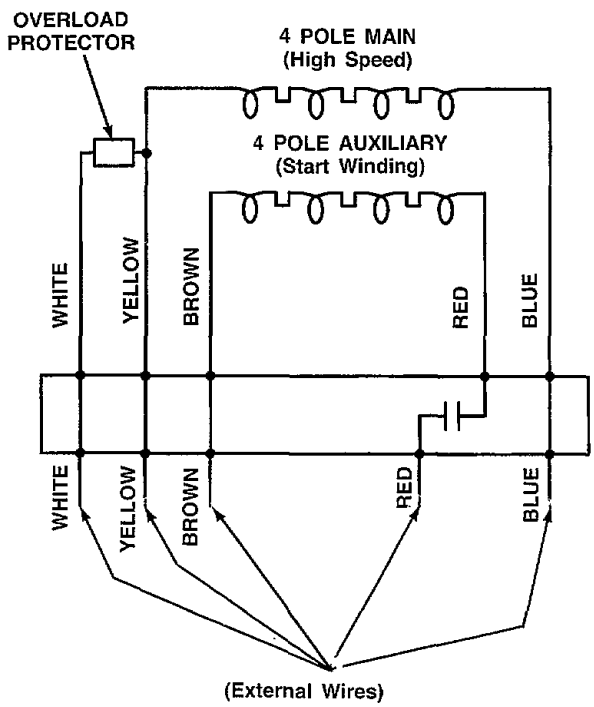
SECTION IX
Wiring Diagram
Internal Wiring of Washer Motor Switch



WA063-SV

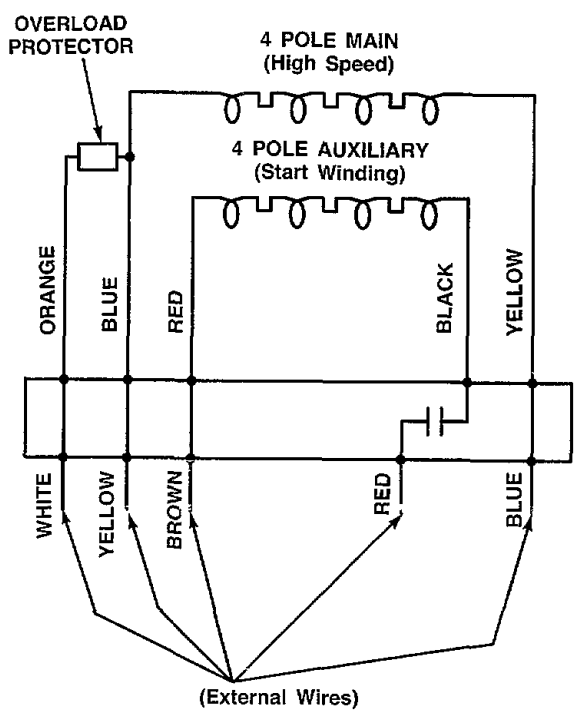


WA064-SV



27659 Motor or 30897 Motor (Emerson)

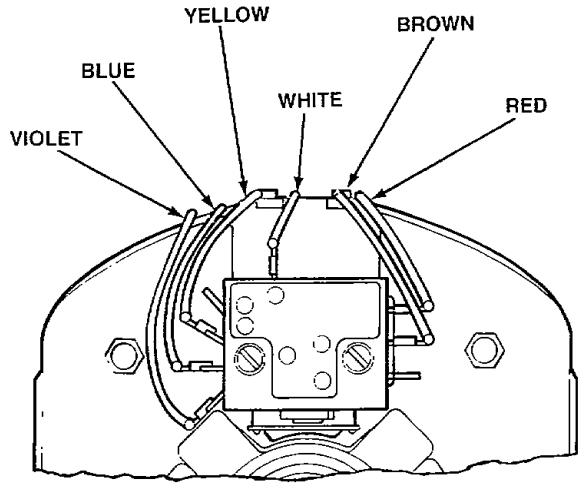
WA078-SV



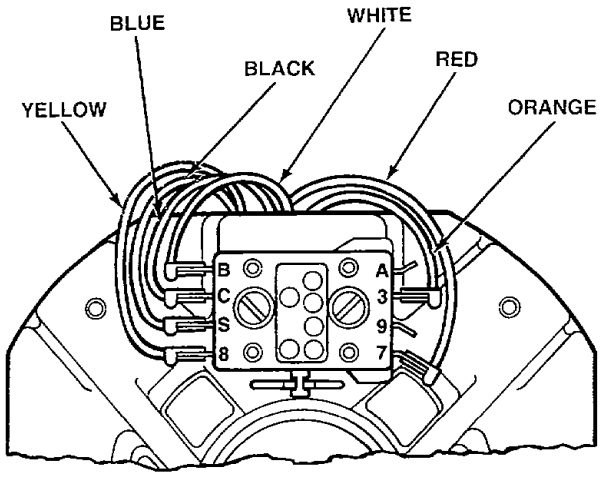
27659 Motor or 30897 Motor (General Electric)

WA078-SV

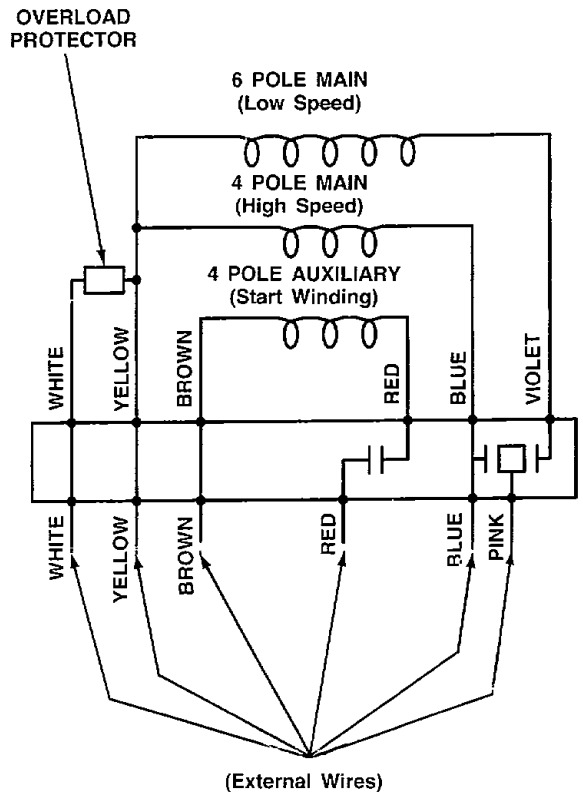
27658 Motor Assembly (1 Speed Motors)



WA065-SV

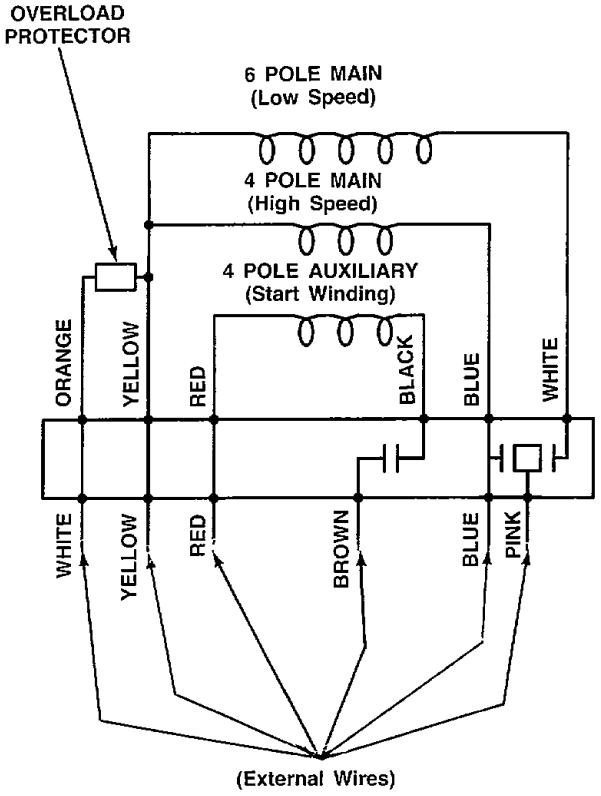


WA066-SV



WA078-SV

27772 Motor or 30895 Motor (Emerson)



WA078-SV

27772 Motor or 30895 Motor (General Electric)

27179 Motor Assembly (2 Speed Motors)