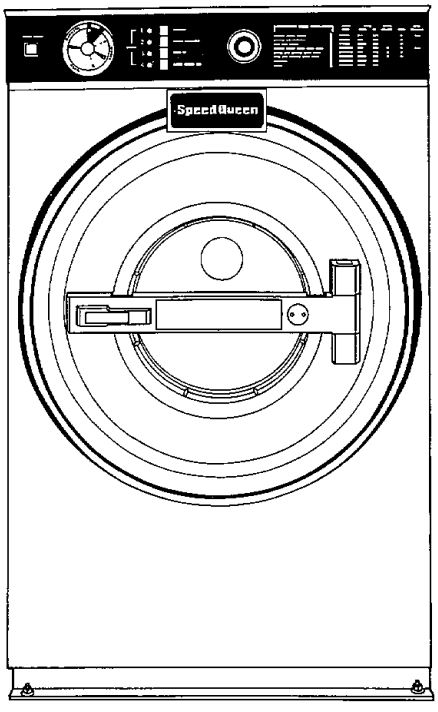
Speed Queen

A **Raytheon** Company

Parts and Service Manual for Washer-Extractor

Models: WX50120, WX50130, WX50320 and WX50330



Speed Queen Company
Shepard Street
P.O. Box 990
Ripon, Wisconsin 54971-0990

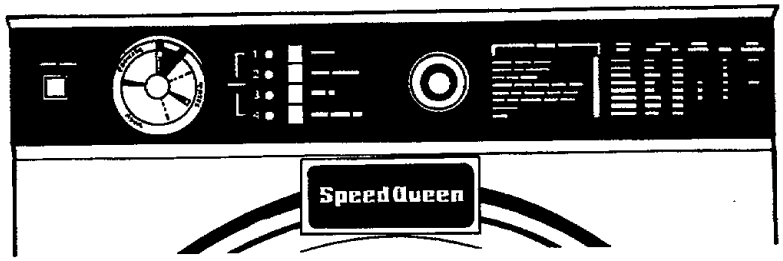
Part No. G134684
11/89

⚠ WARNING

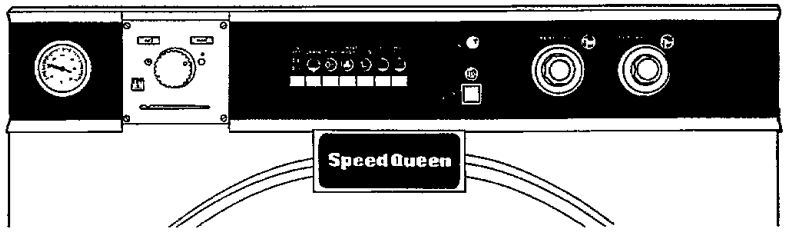
FAILURE TO INSTALL, MAINTAIN, AND/OR OPERATE THIS MACHINE ACCORDING TO THE MANUFACTURER'S INSTRUCTIONS MAY RESULT IN CONDITIONS WHICH CAN PRODUCE BODILY INJURY AND/OR PROPERTY DAMAGE.

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 the Washer-Extractor. These factors MUST BE supplied by the person(s) installing, maintaining or operating the unit.

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



WX50120 and WX50320 Push Button Control



WX50130 and WX50330 Programmable Card Control

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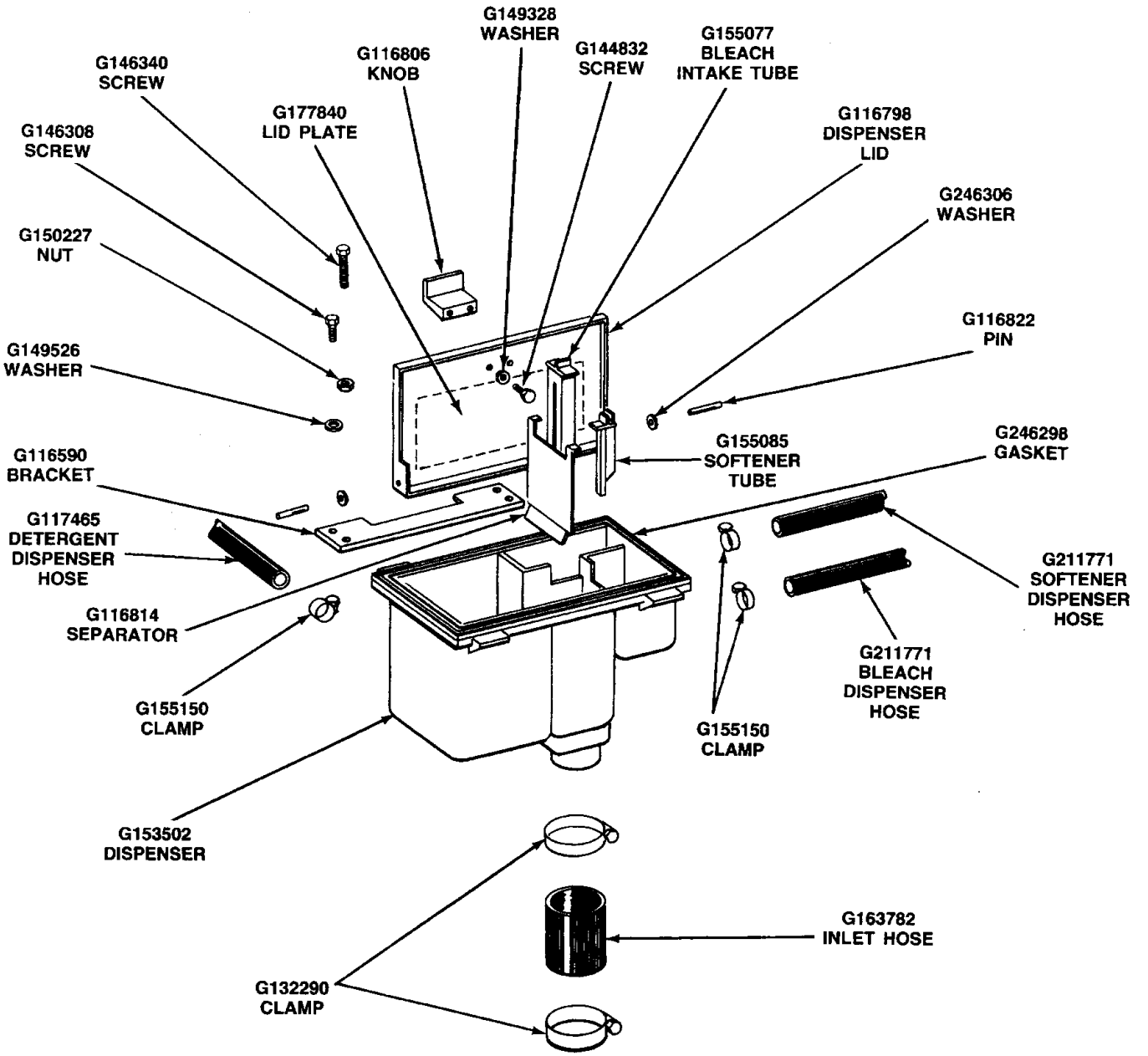
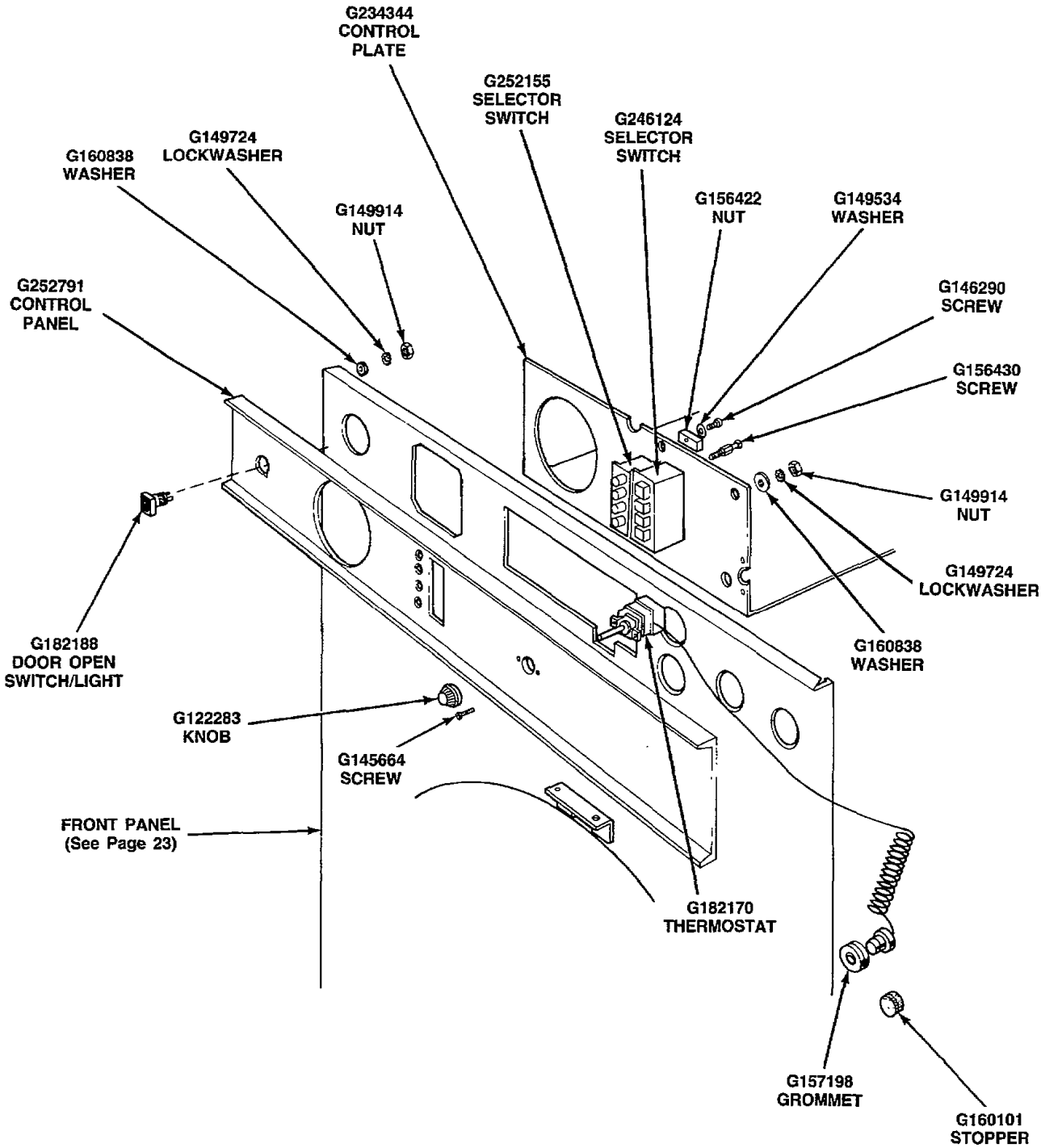
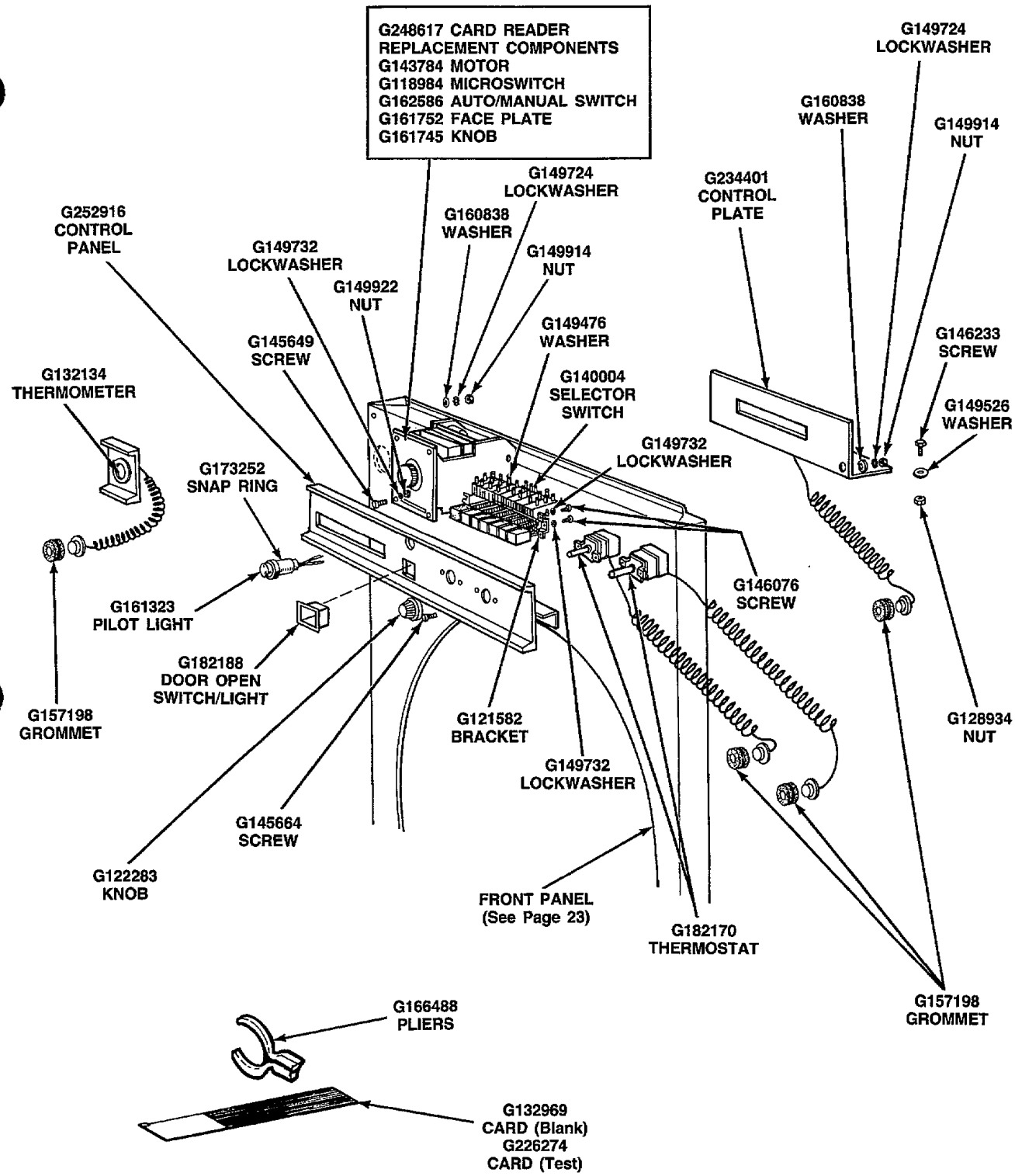
SECTION I
Parts



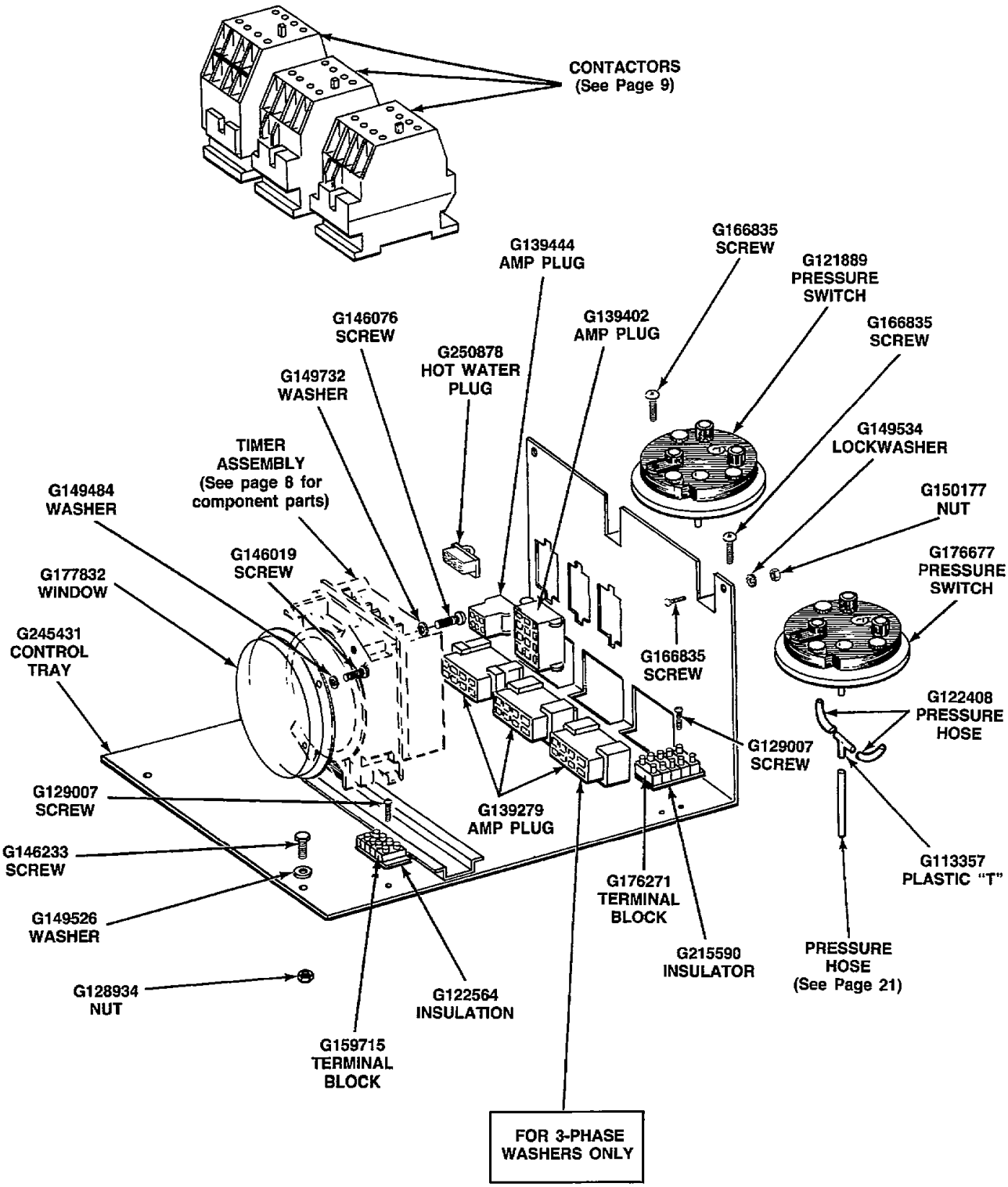
DISPENSER, COVER AND HOSES



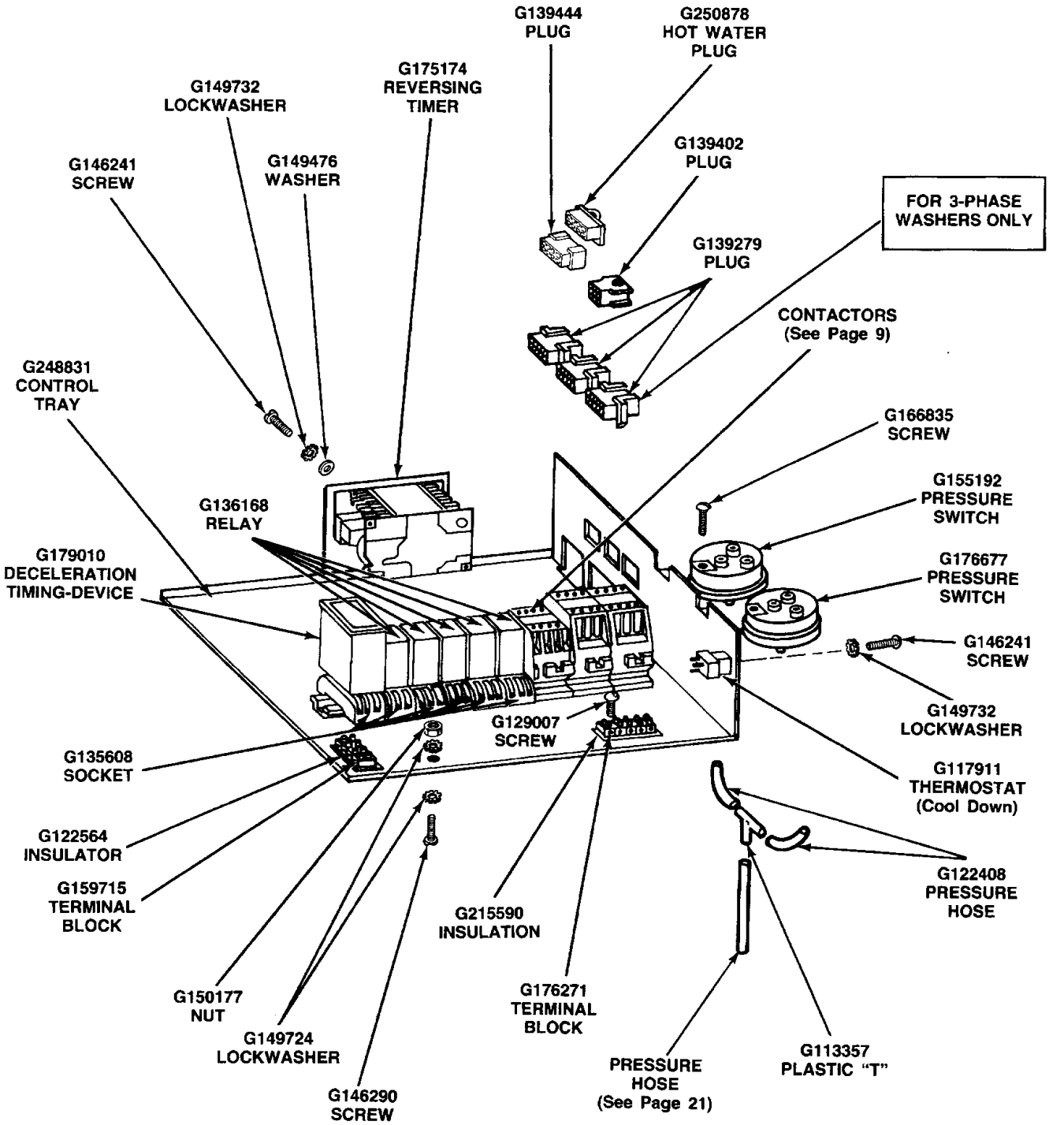
CONTROL PANEL AND CONTROLS
(Models WX50120 and WX50320)



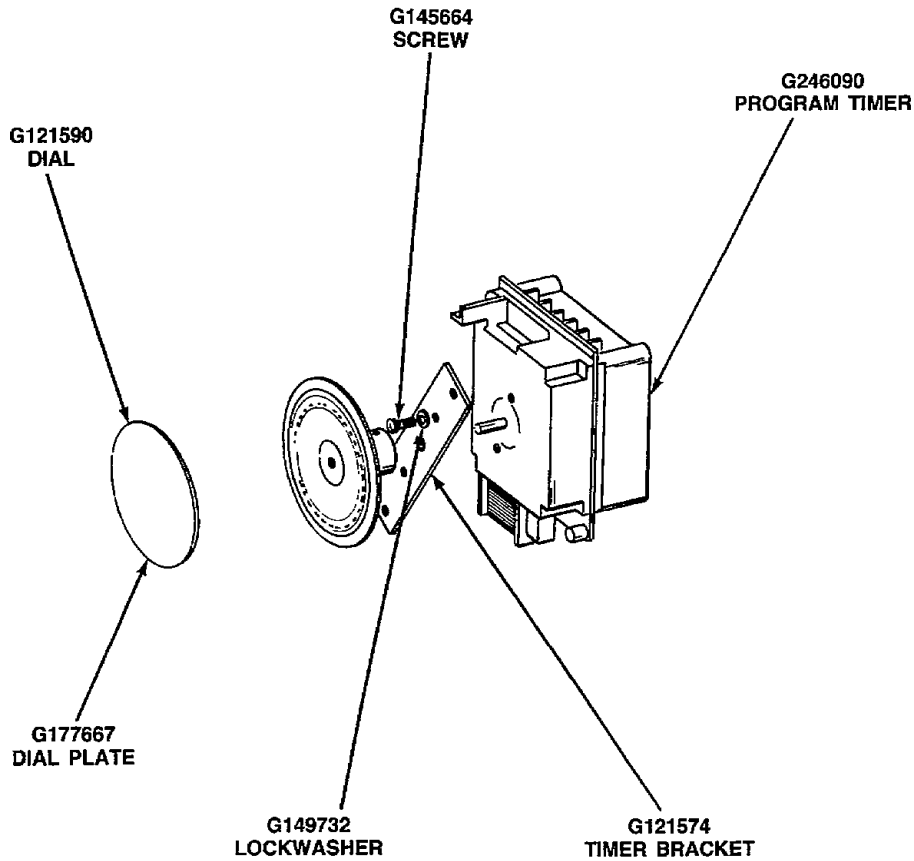
CONTROL PANEL AND CONTROLS
(Models WX50130 and WX50330)



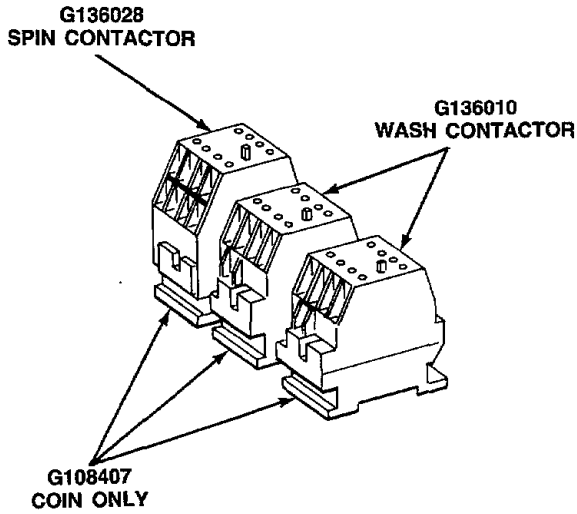
CONTROL TRAY AND CONTROLS
(Models WX50120 and WX50320)



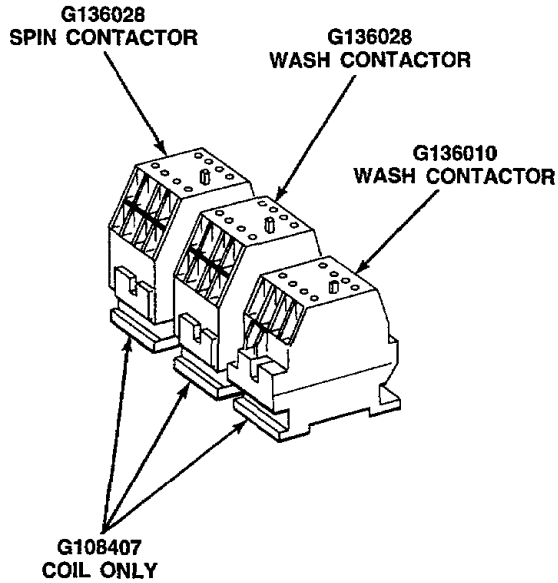
CONTROL TRAY AND CONTROLS
(Models WX50130 and WX50330)



PROGRAM TIMER ASSEMBLY

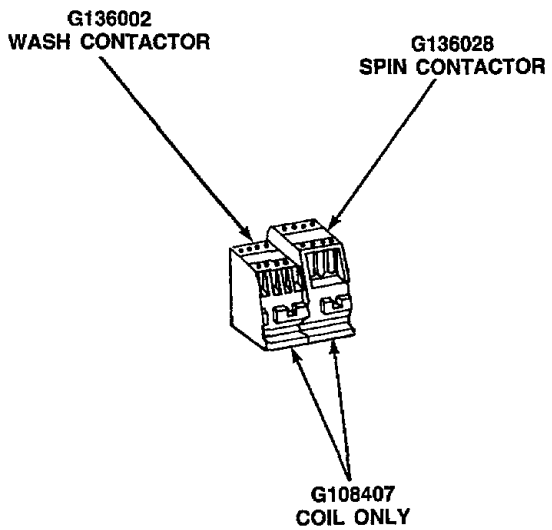


ONE PHASE



THREE PHASE

CONTACTORS
(Models WX50120 and WX50320)



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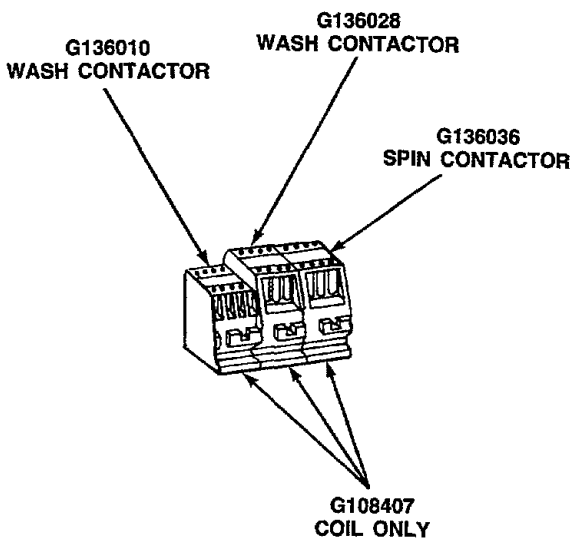
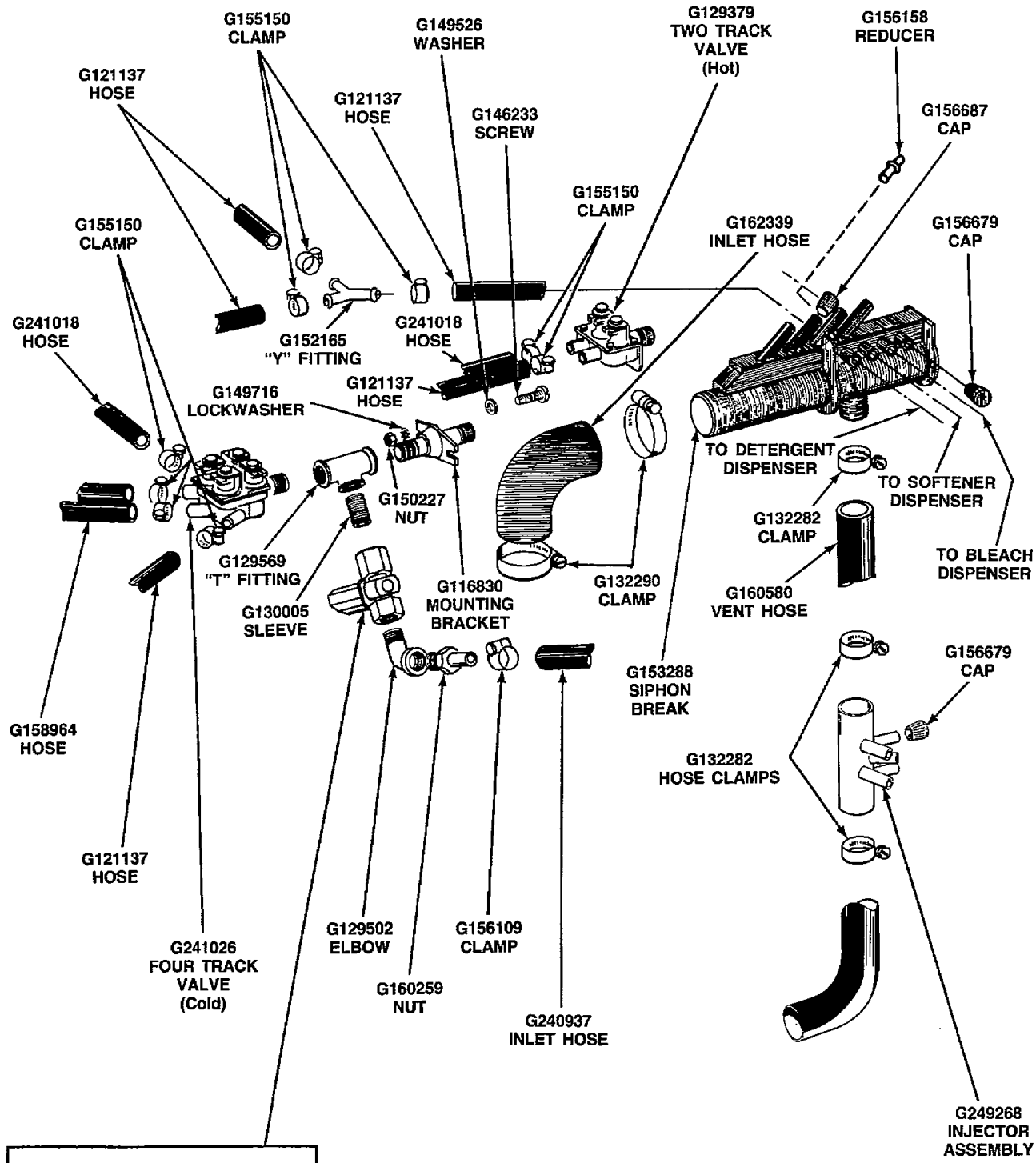


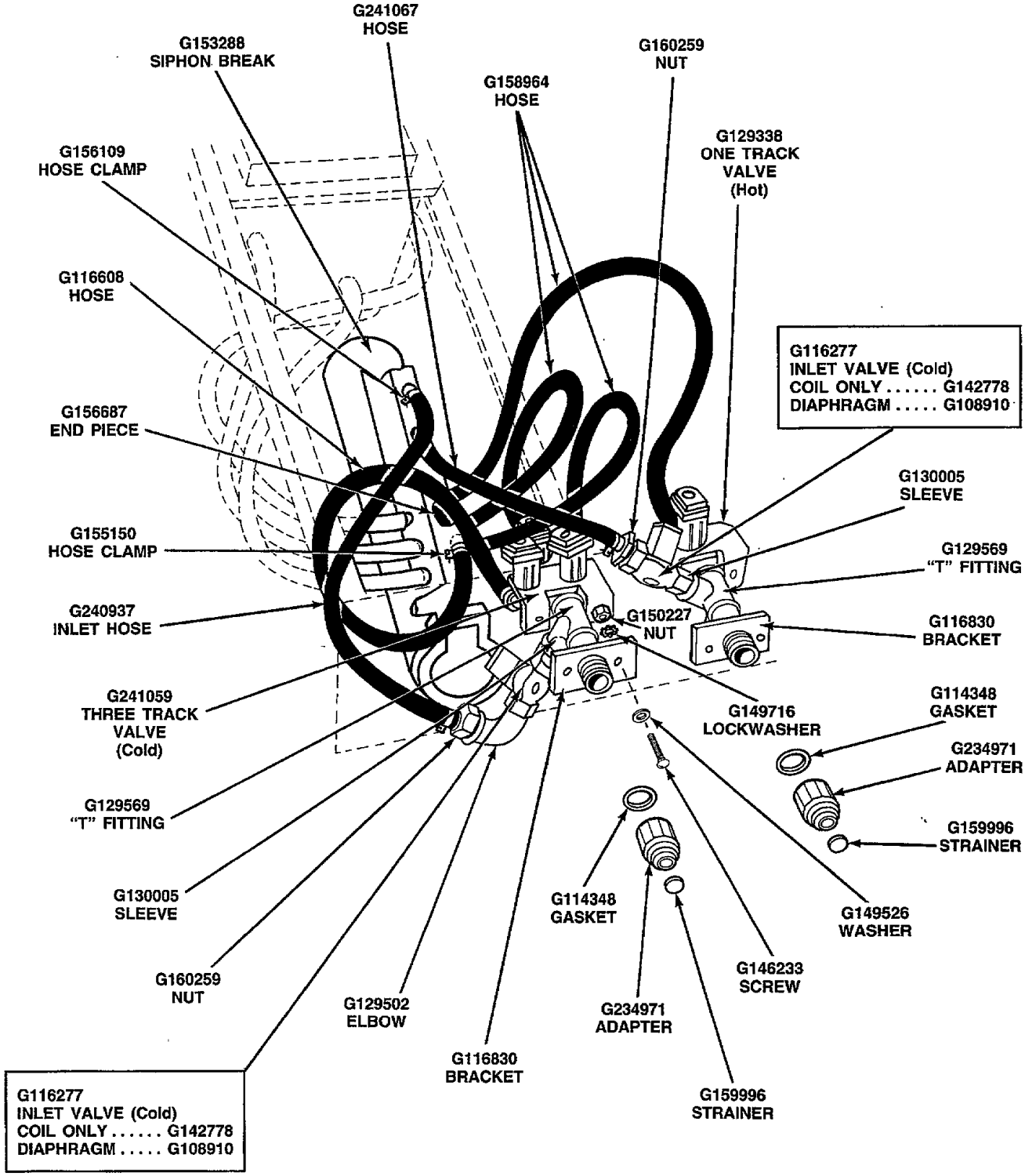
THREE PHASE

CONTACTORS
(Models WX50130 and WX50330)

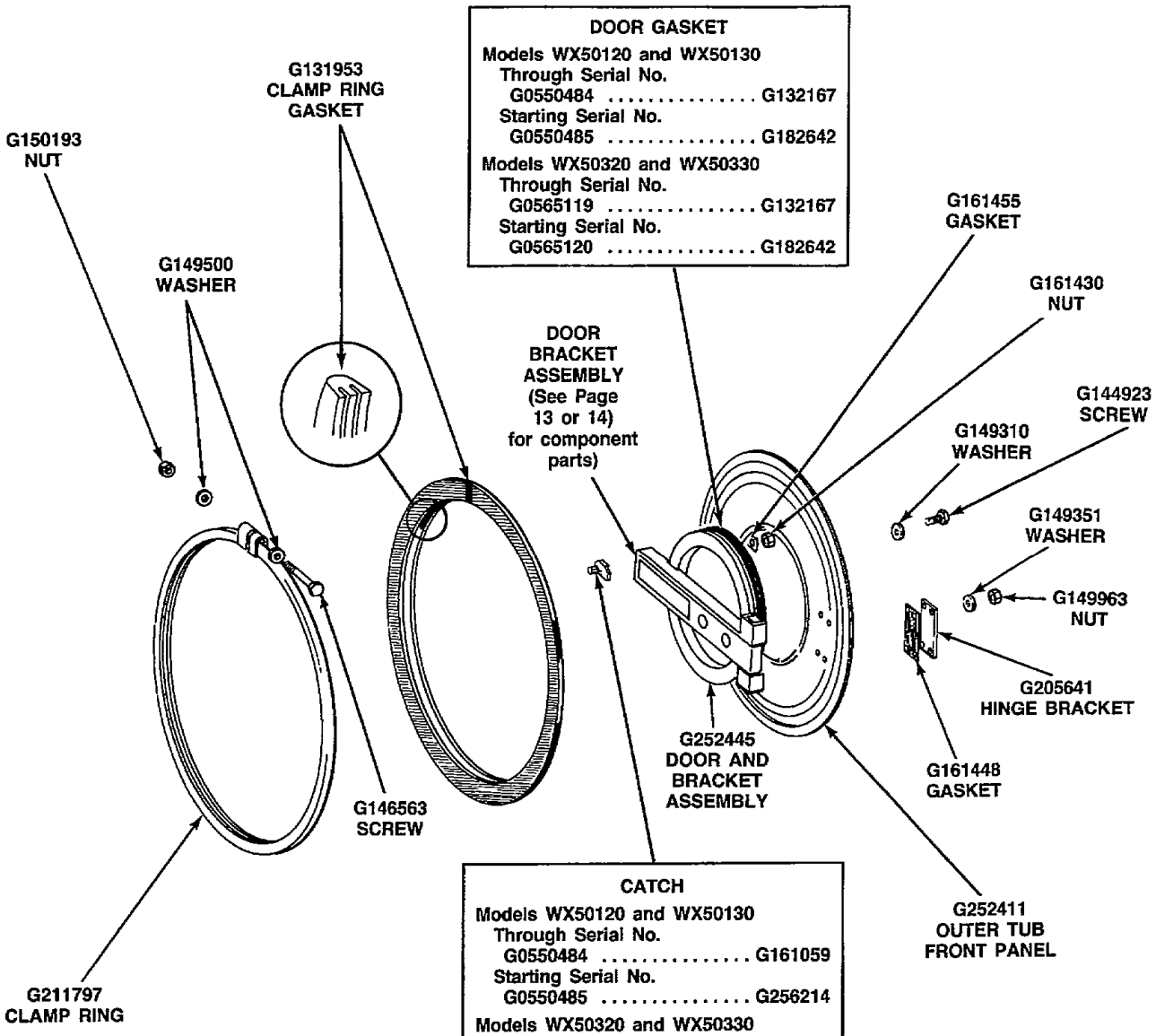


G116277	
WATER VALVE (Cold)	
COIL ONLY	G142778
DIAPHRAGM ONLY	G108910

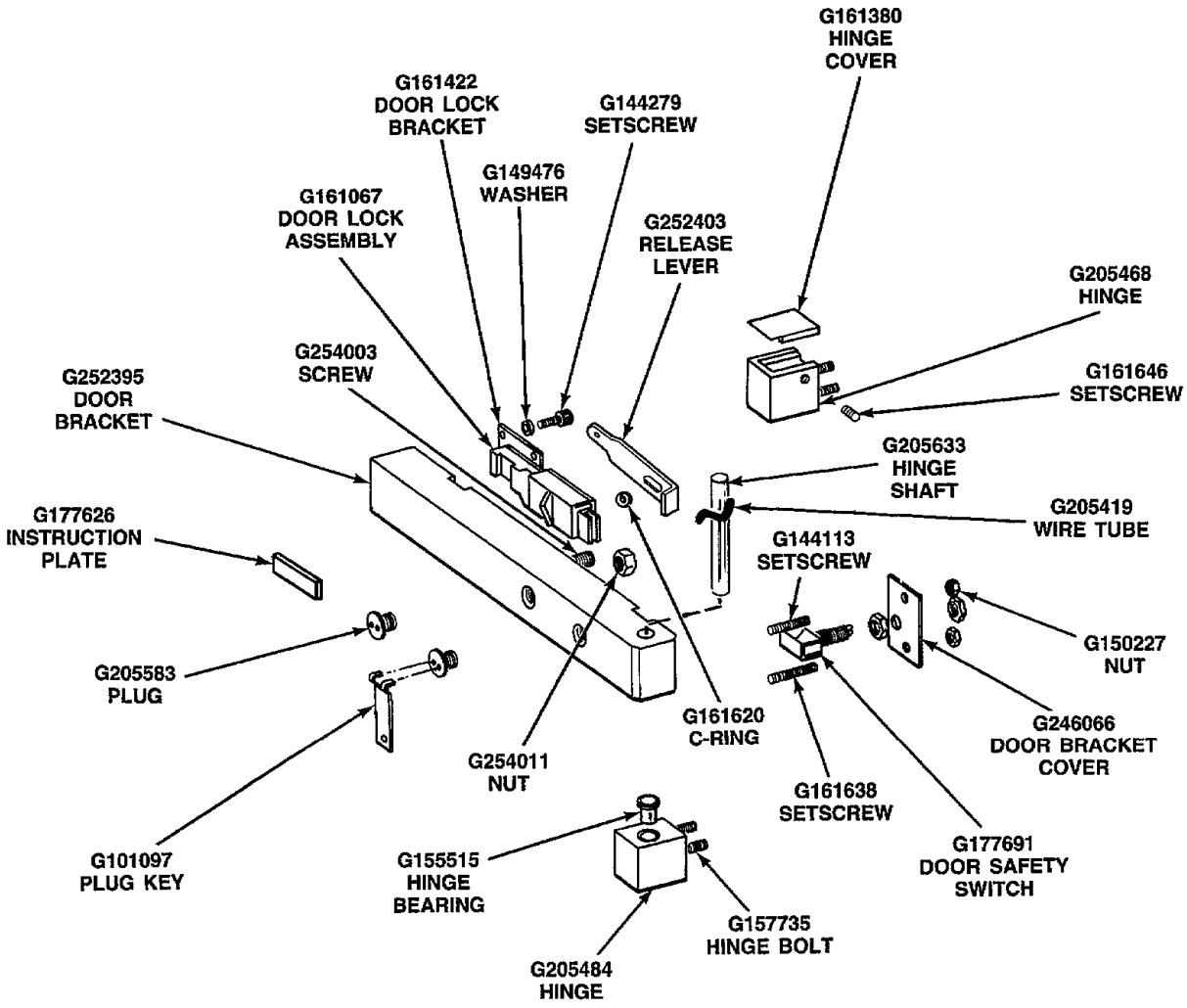
SIPHON BREAK, INLET VALVES AND HOSES
(Models WX50120 and WX50320)



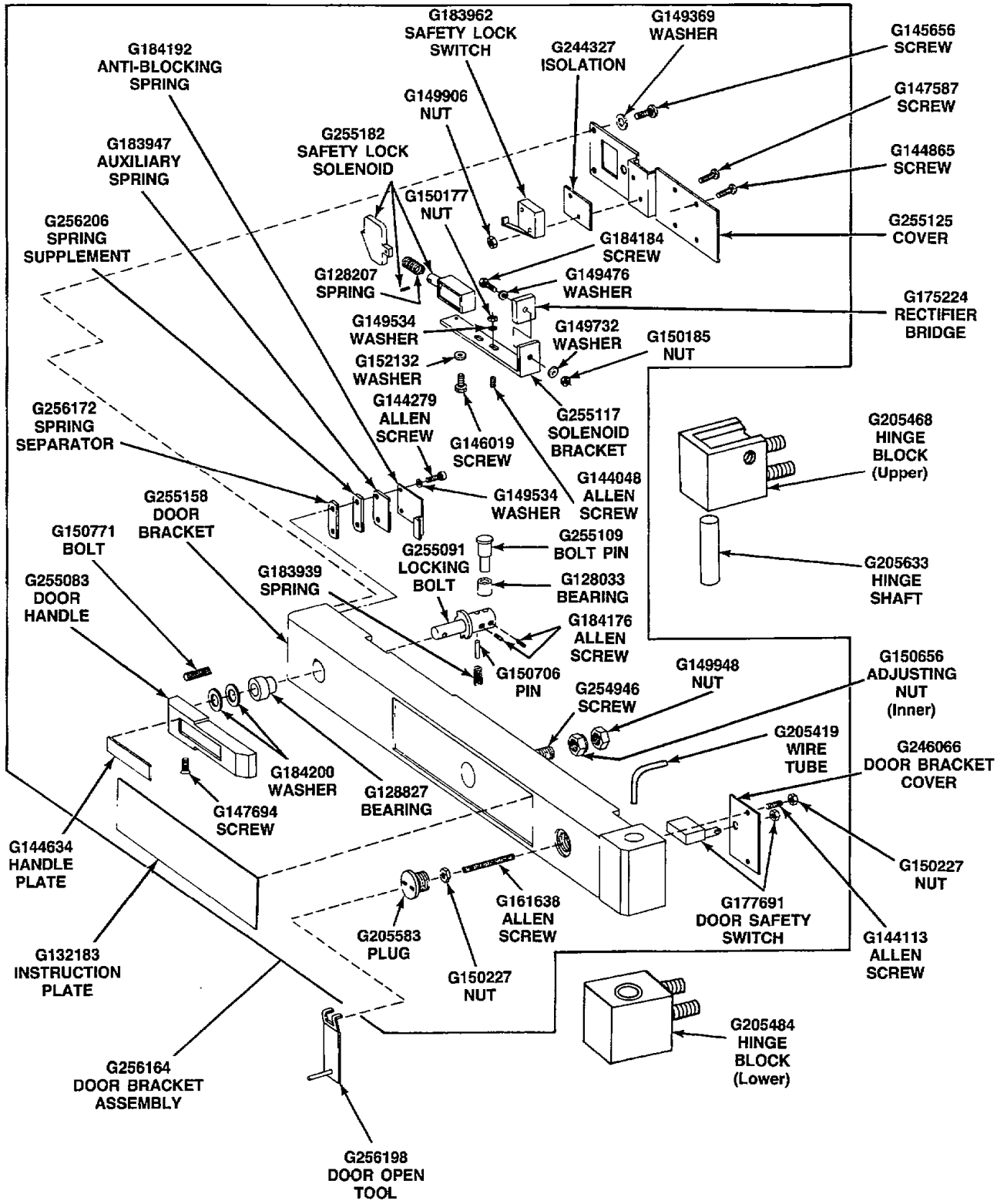
SIPHON BREAK, INLET VALVES AND HOSES
(Models WX50130 and WX50330)



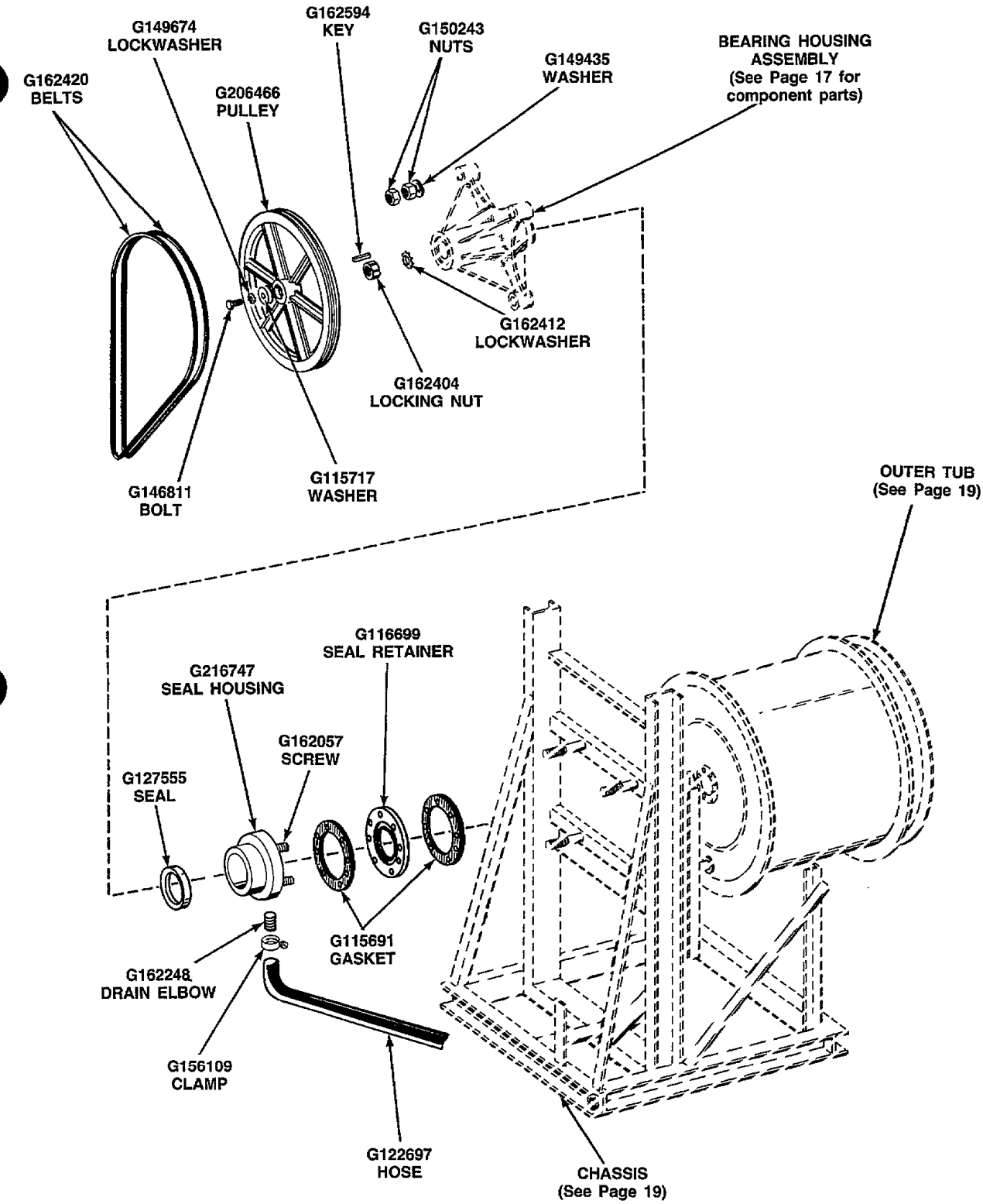
OUTER TUB FRONT PANEL AND DOOR ASSEMBLY



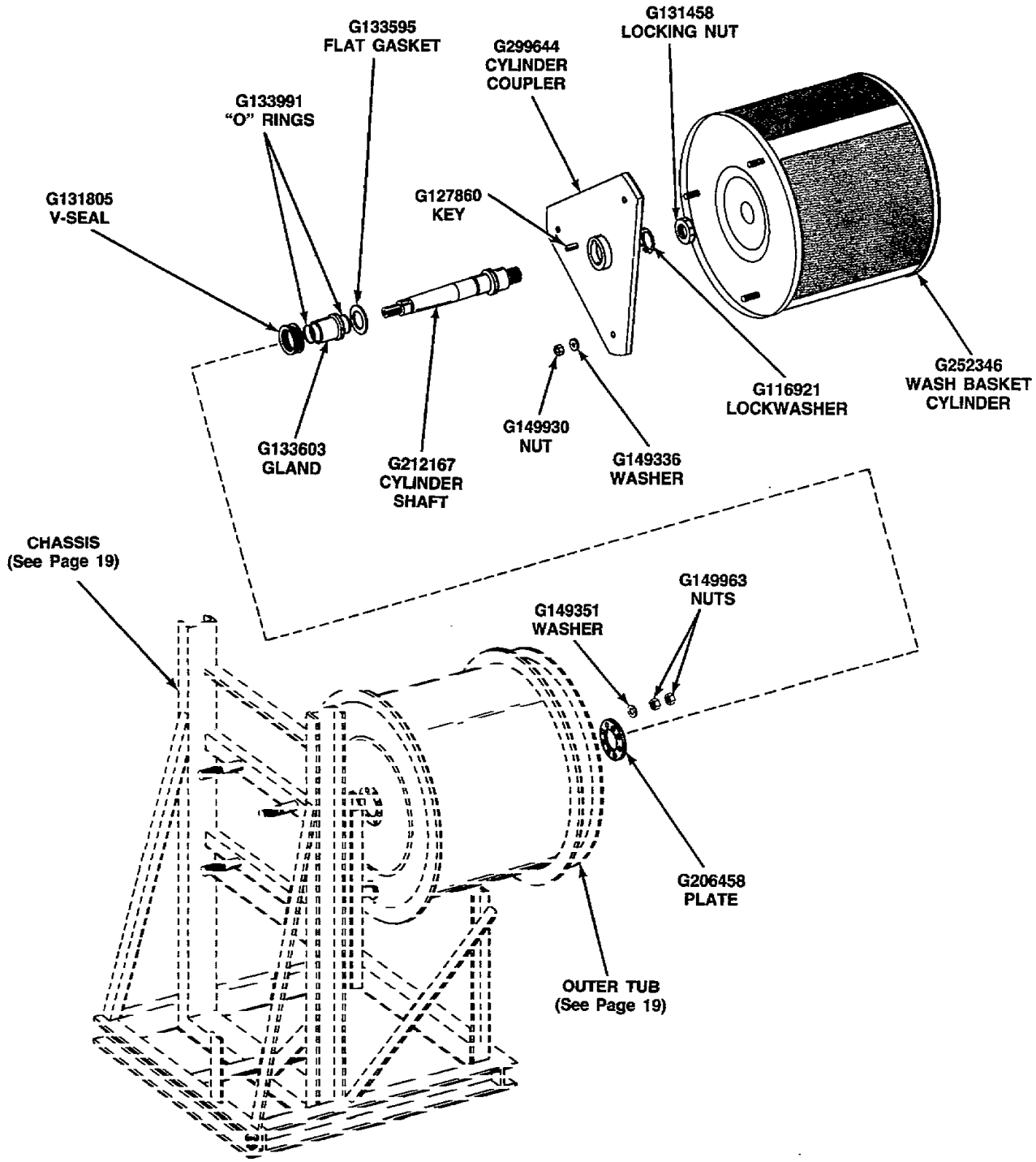
DOOR BRACKET ASSEMBLY
(Models WX50120 and WX50130 Through Serial No. G0550484)
(Models WX50320 and WX50330 Through Serial No. G0565119)



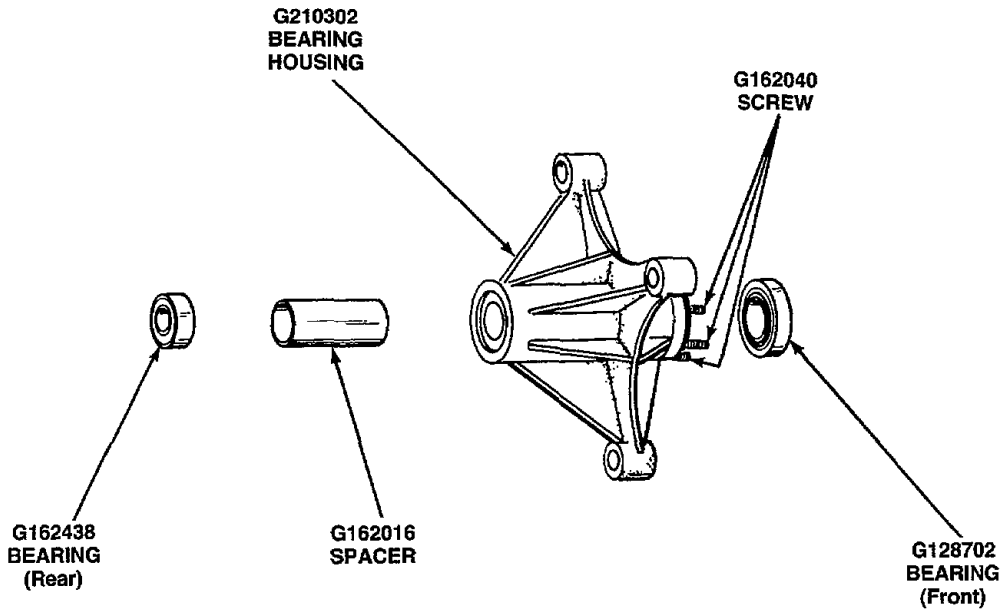
DOOR BRACKET ASSEMBLY
(Models WX50120 and WX50130 Starting Serial No. G0550485)
(Models WX50320 and WX50330 Starting Serial No. G0565120)



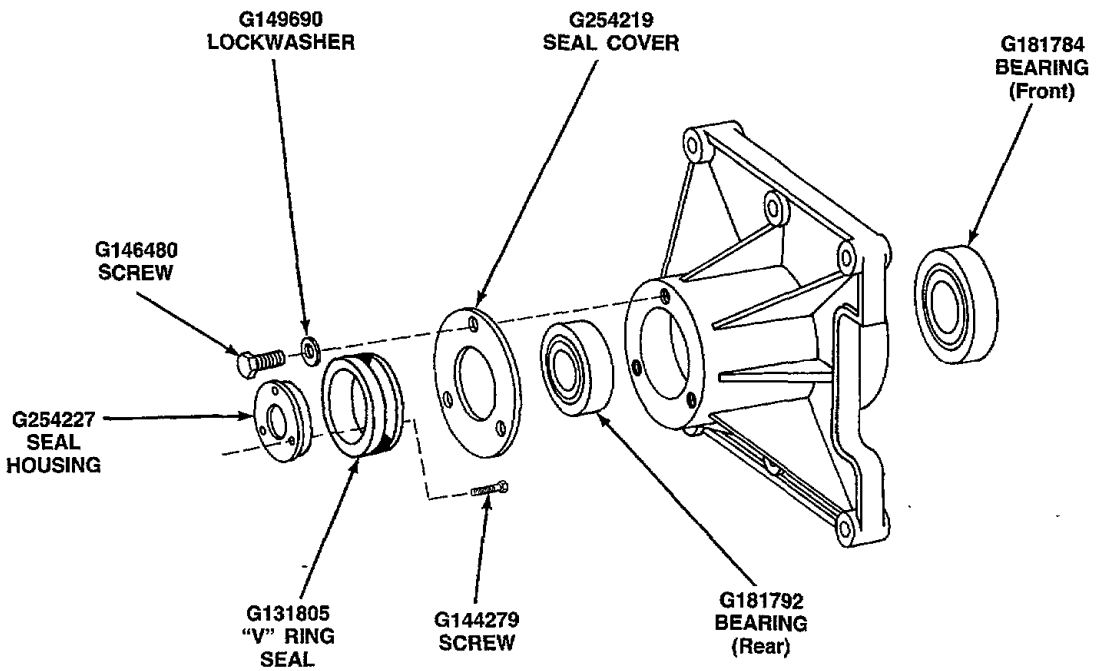
BELTS, PULLEY AND SEAL HOUSING



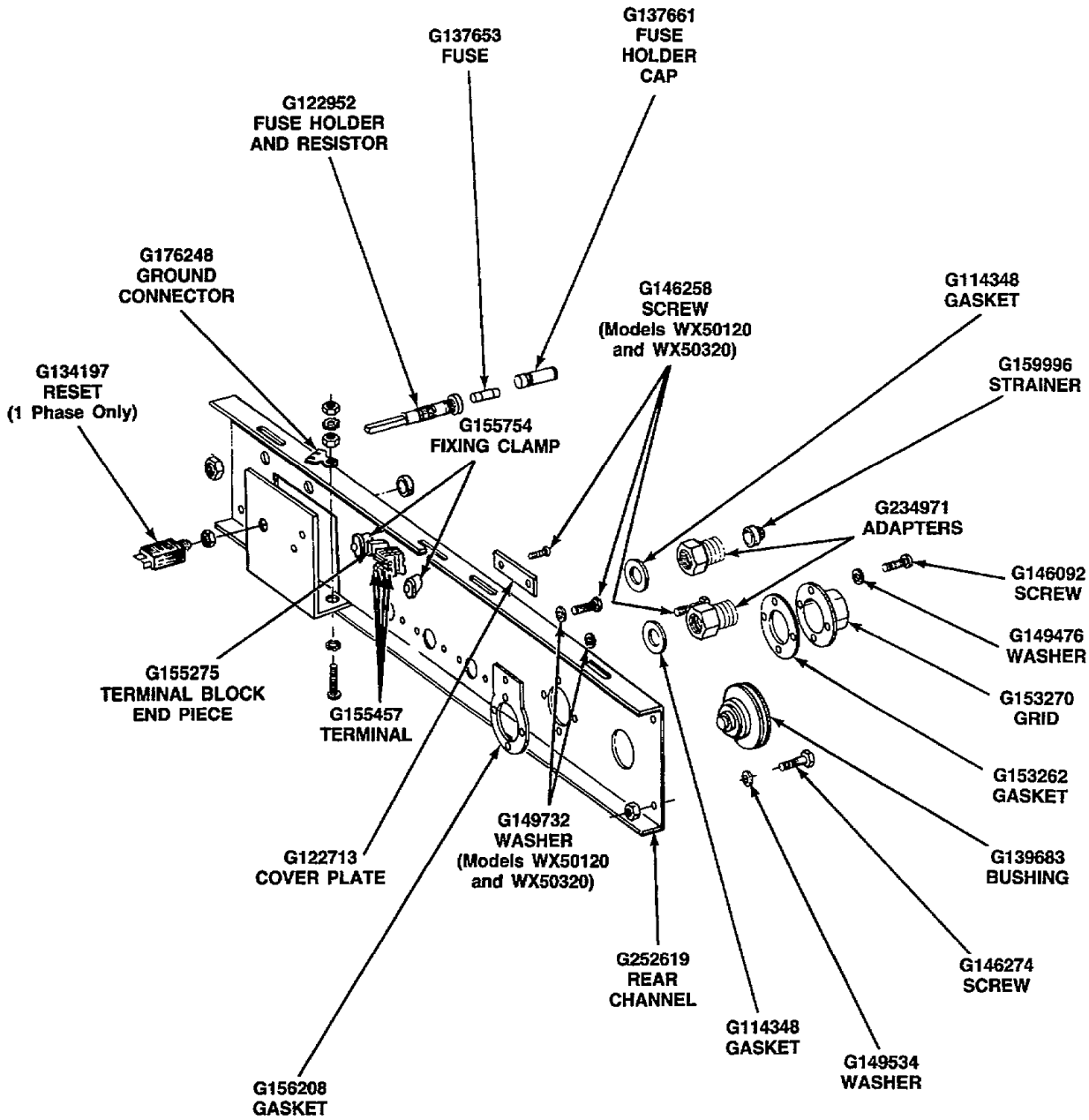
CYLINDER AND SHAFT ASSEMBLY



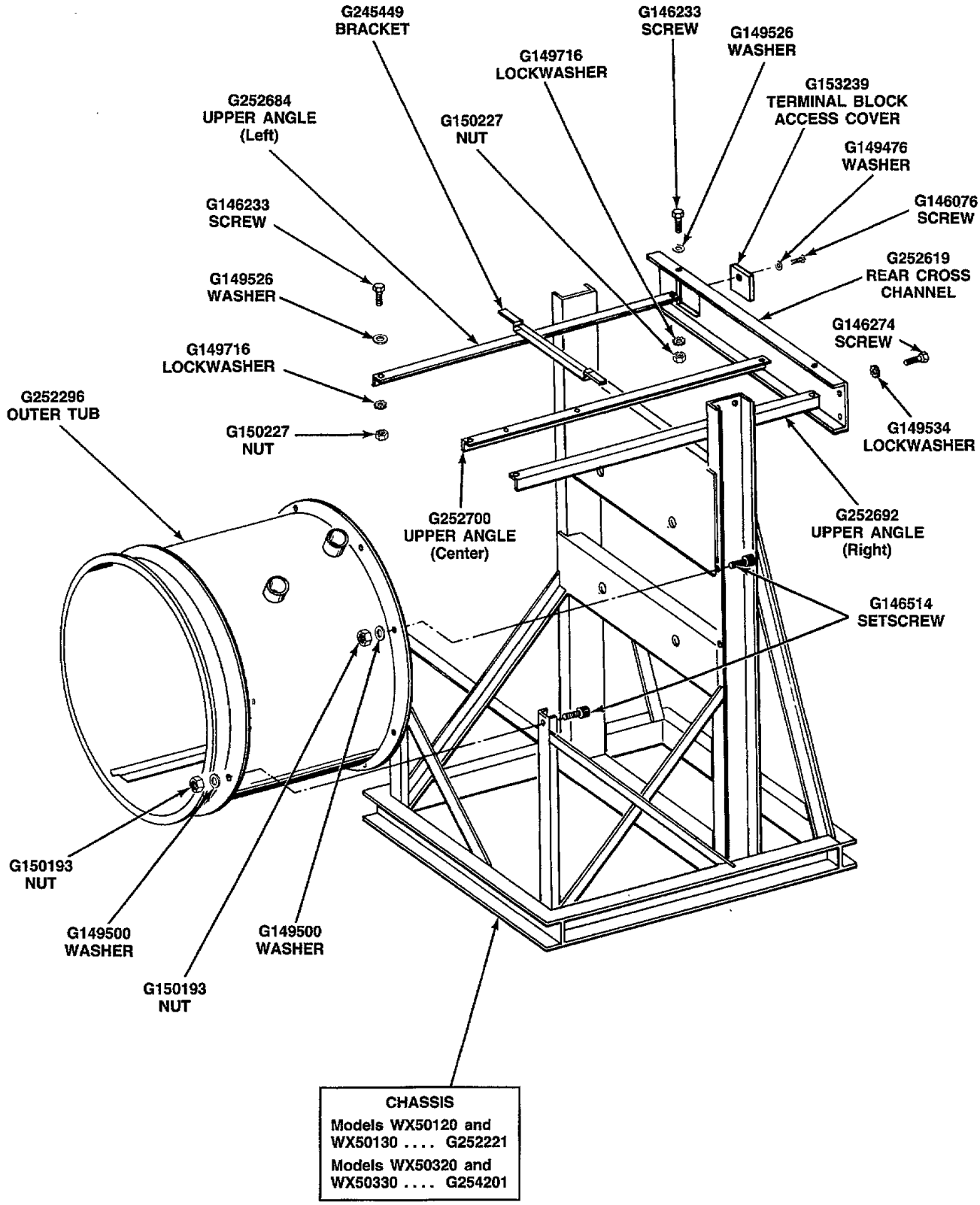
BEARING HOUSING ASSEMBLY
(Models WX50120 and WX50130)



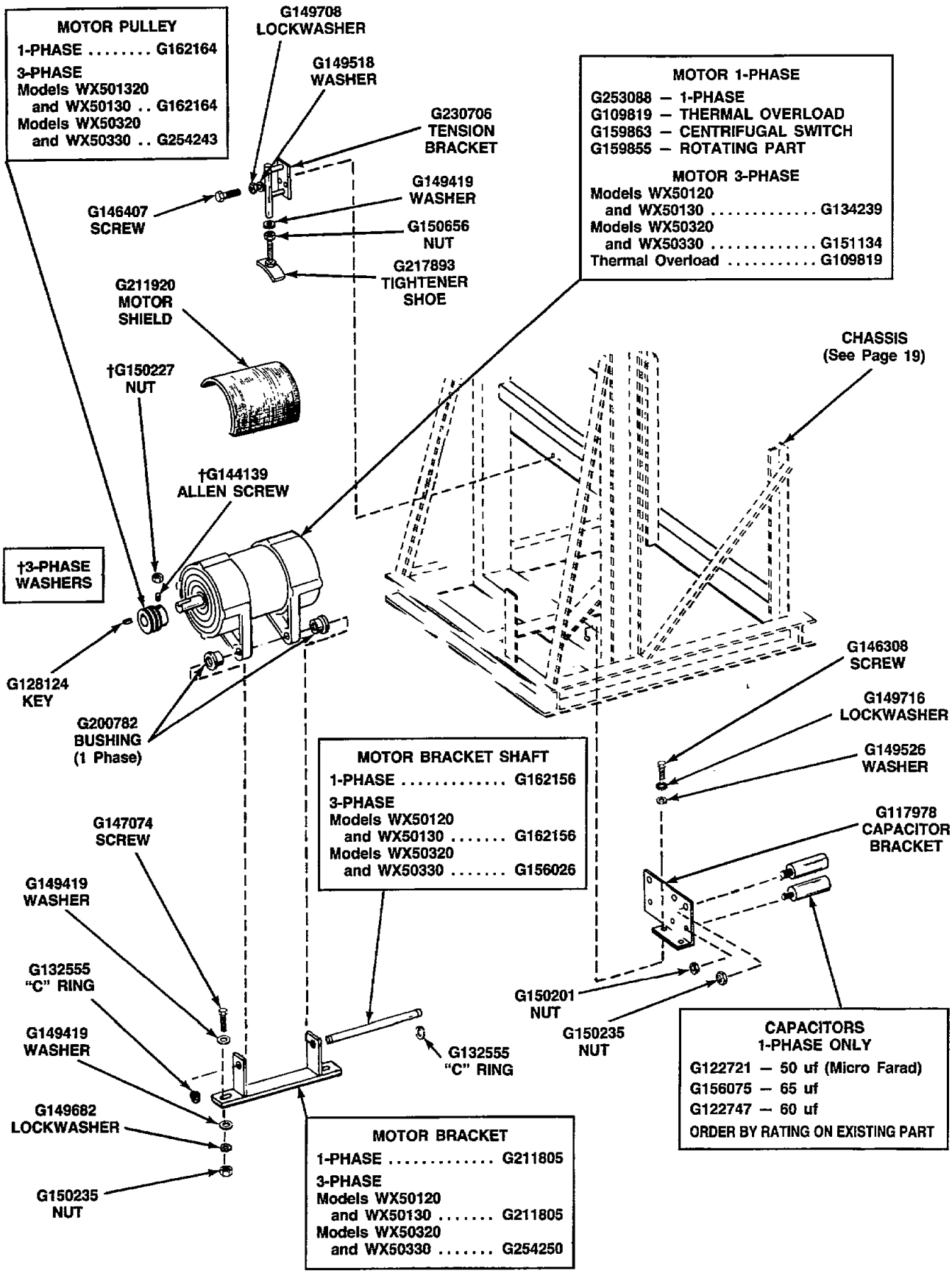
BEARING HOUSING ASSEMBLY
(Models WX50320 and WX50330)



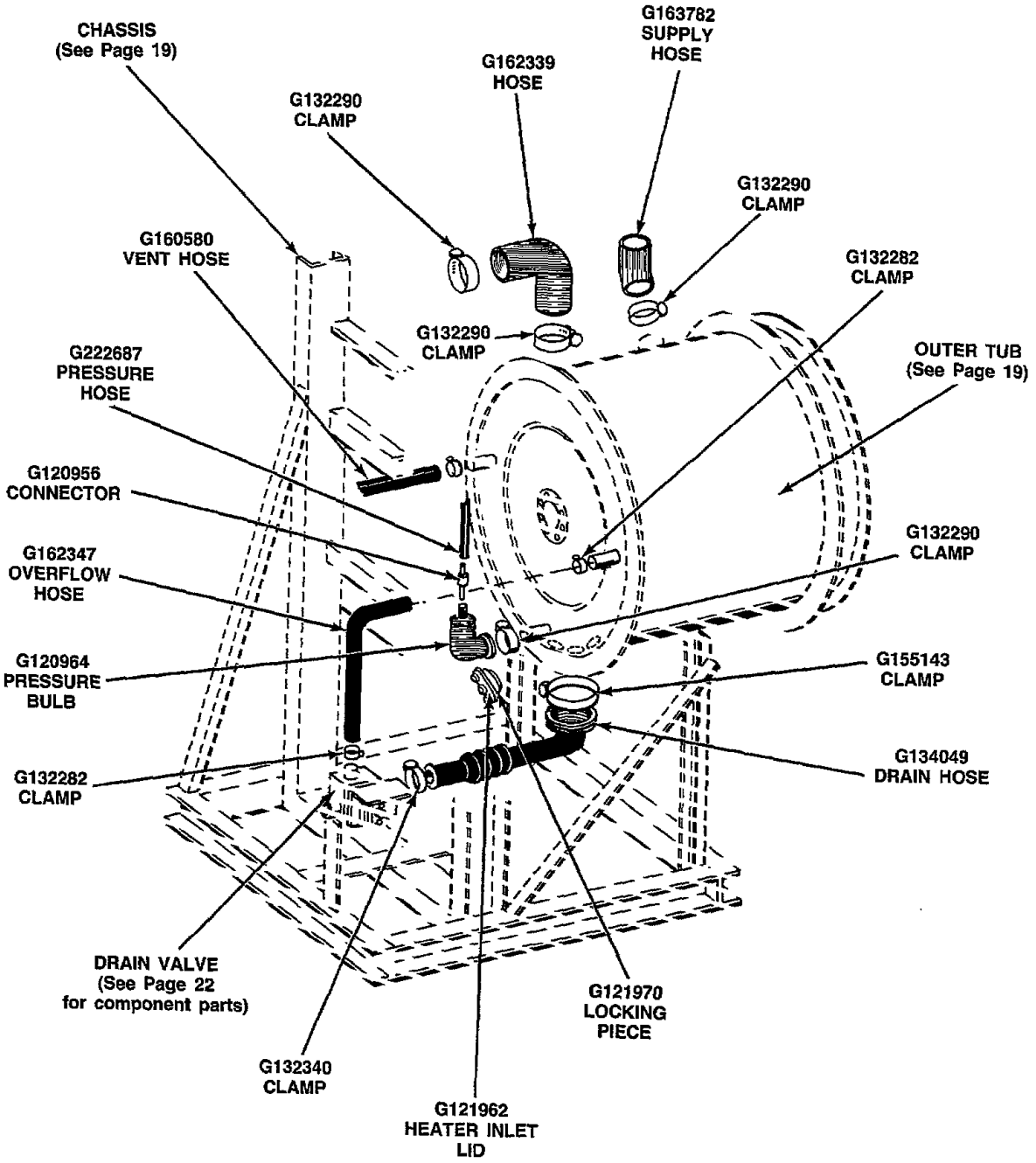
REAR CHANNEL ASSEMBLY



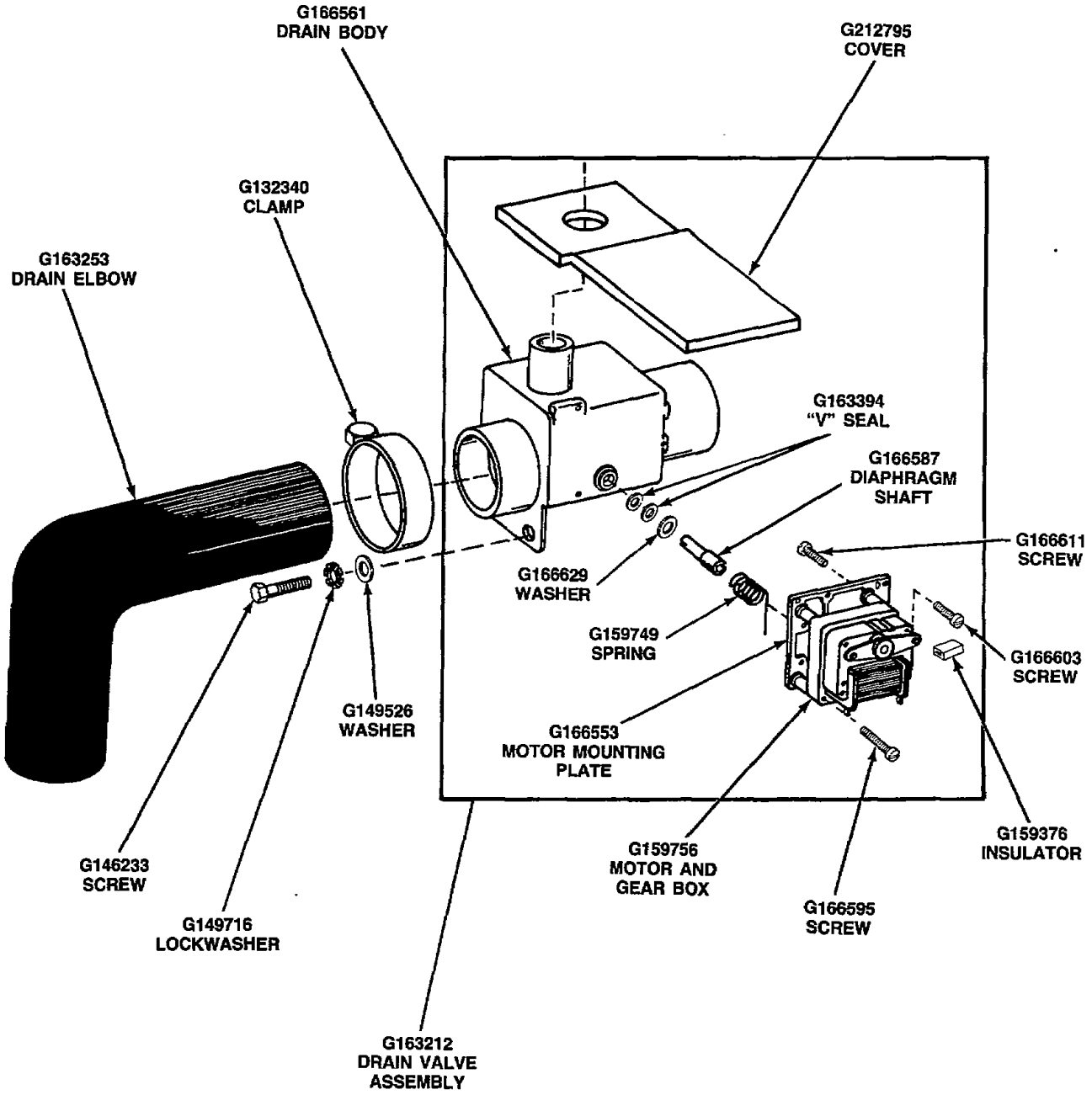
OUTER TUB, CHASSIS AND CONTROL FRAME ASSEMBLY



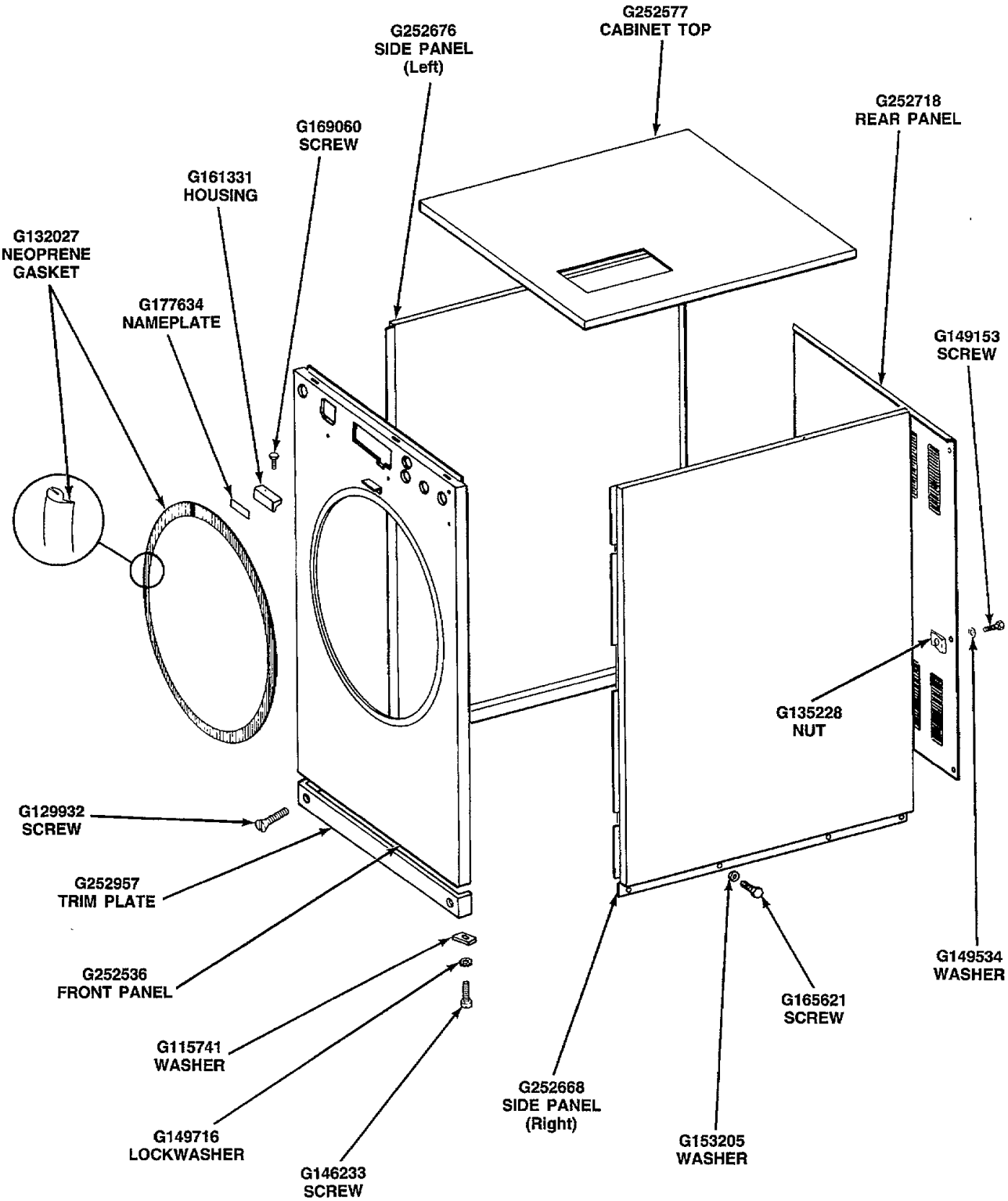
MOTOR AND CAPACITORS



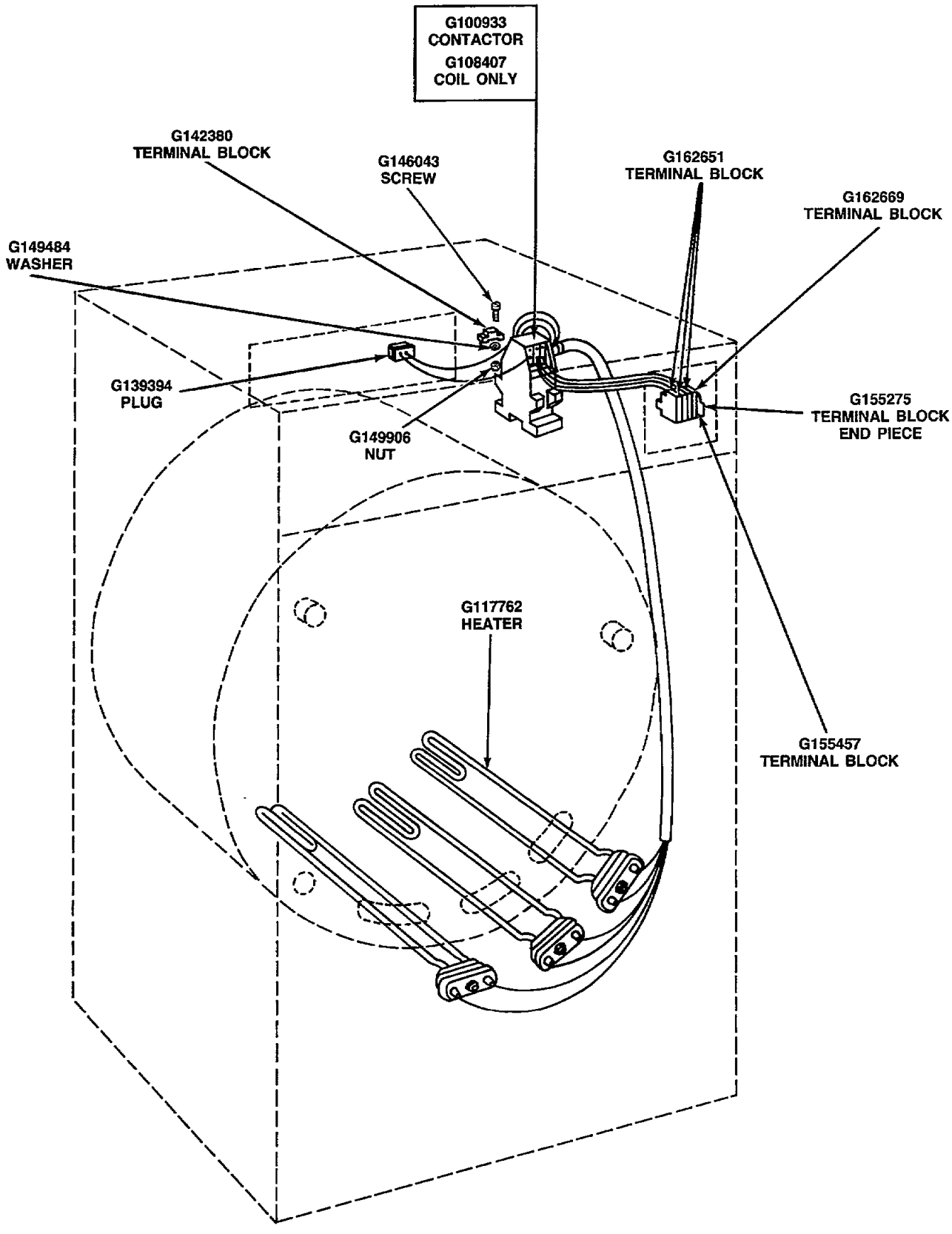
PRESSURE HOSE, BULB, DRAIN VALVE AND HOSES



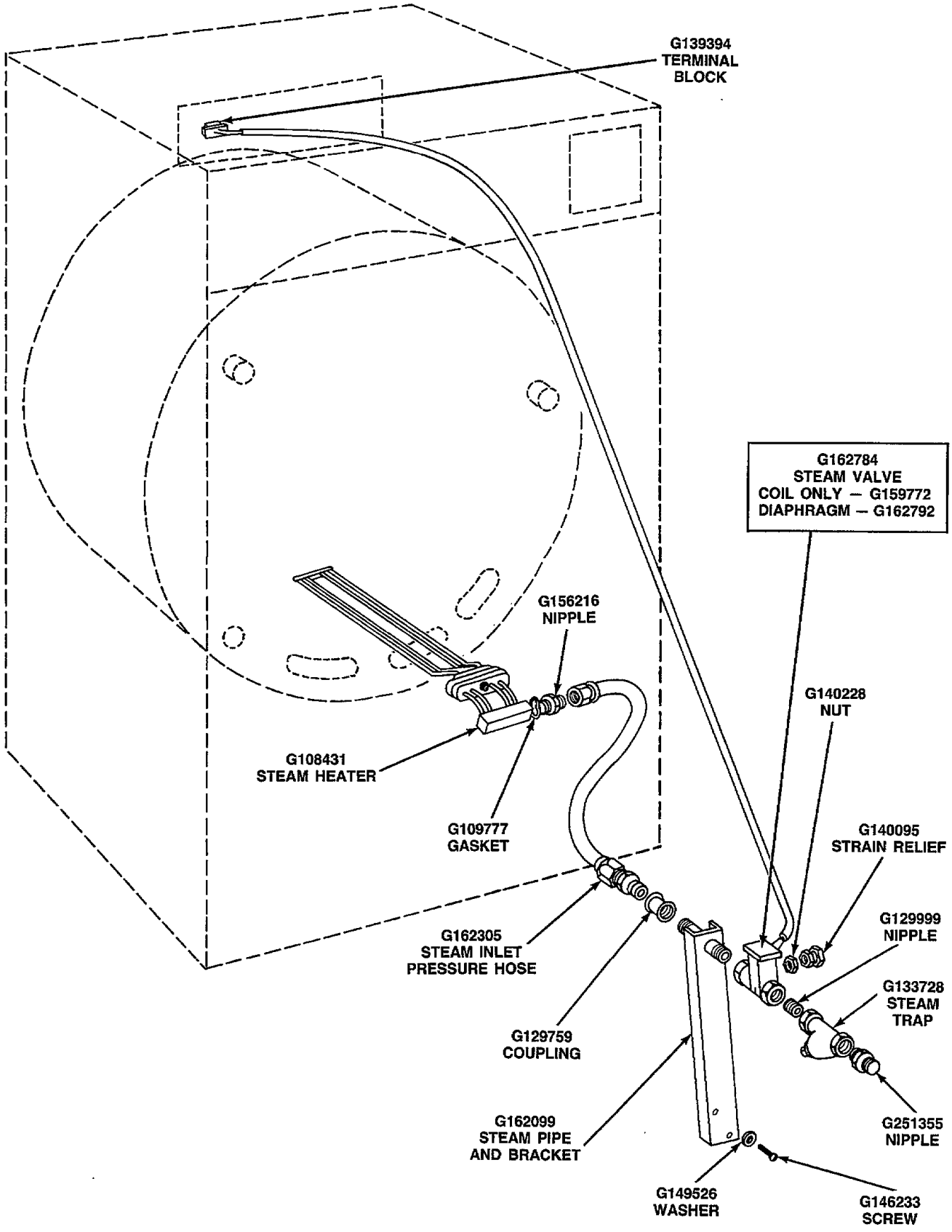
DRAIN VALVE ASSEMBLY AND DRAIN ELBOW



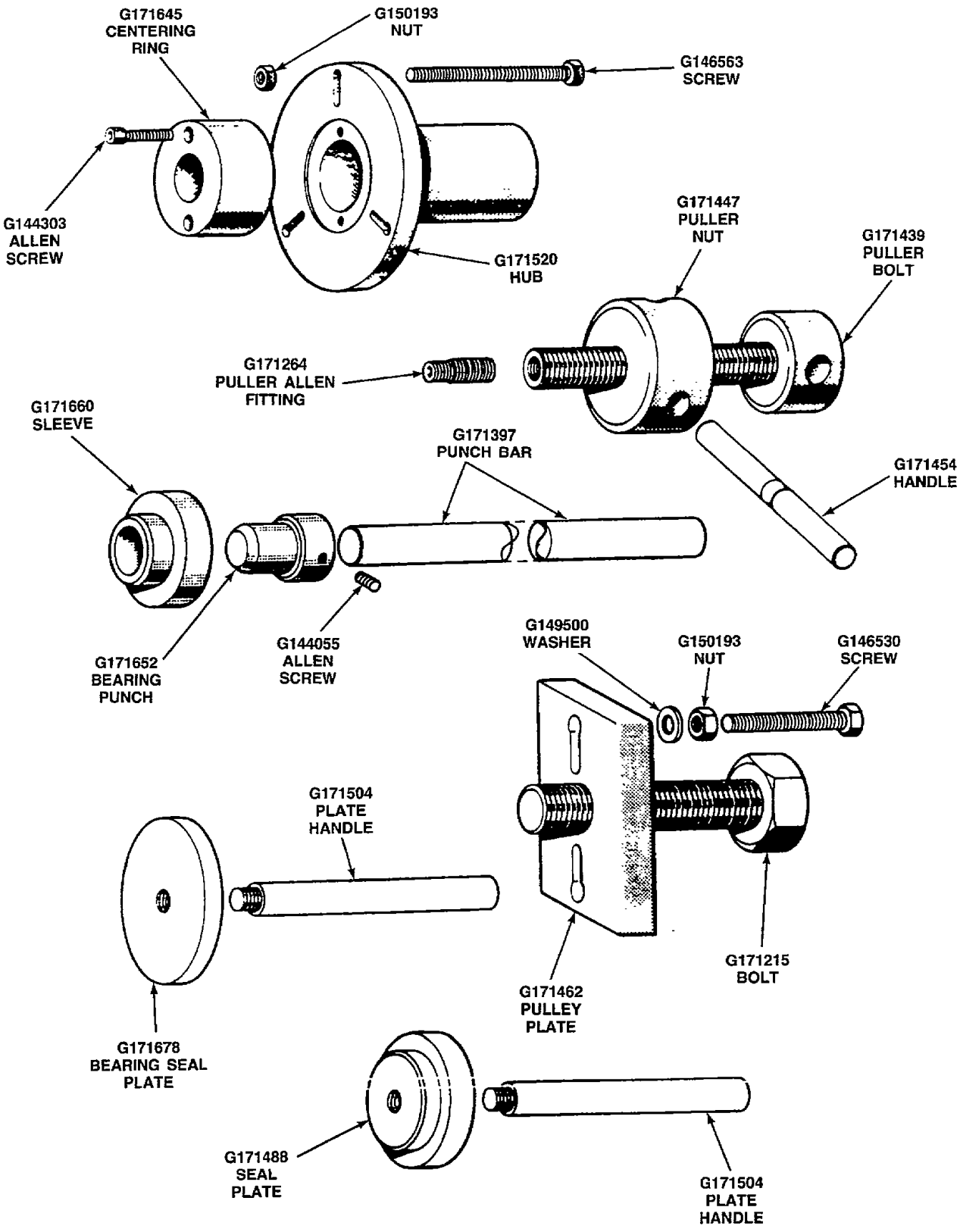
CABINET TOP, SIDE, FRONT AND REAR PANELS



ELECTRIC HEATER KIT



STEAM HEATER KIT



261P4 TOOL KIT
For All "WX" Washers

SPECIAL TOOLS

SECTION II
Service Procedures

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

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

IMPORTANT: Metric tools are required for servicing the washer.

⚠WARNING

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

1. CABINET TOP

a. Remove the two screws holding the cabinet top rear corner tabs to the rear cross channel of the washer.
b. Lift up on the back portion of the cabinet top and slide the top forward to disengage the cabinet top from the hold down tabs on the top flange of the front panel.
c. Lift the cabinet top off the washer.

2. CONTROL PANEL

a. Remove the two screws holding the cabinet top rear corner tabs to the rear cross channel of the washer.
b. Lift up on the back portion of the cabinet top and slide the top forward to disengage the cabinet top from the hold down tabs on the top flange of the front panel.
c. Lift the cabinet top off the washer.
d. Pull control knob off thermostat shaft.
e. Remove screws holding thermostat(s) to control panel.

IMPORTANT: Do not kink or otherwise damage the capillary tube when removing the thermostat(s).

f. Remove the six screws holding the control panel to the cabinet.
g. Pull control panel forward exposing the door open switch and run light.
h. Using a Tru-Arc pliers, remove the Tru-Arc ring attaching the run light to the control panel.
i. Disconnect the wires from the light, then bend the tabs on the four corners of the light and push the light out through the front of the control panel.

IMPORTANT: Before disconnecting wires from switch light, mark the terminal connections and the wire numbers so the wires can be reinstalled correctly.

3. PROGRAM TIMER (Models WX50120 and WX50320)

a. Remove the two screws holding the cabinet top rear corner tabs to the rear cross channel of the washer.
b. Lift up on the back portion of the cabinet top and slide the top forward to disengage the cabinet top from the hold down tabs on the top flange of the front panel.
c. Lift the cabinet top off the washer.
d. Remove the two screws holding the program timer mounting plate to the rear of the window display.

IMPORTANT: Mark all wire numbers and corresponding terminals on a separate piece of paper before disconnecting any wiring. If you have a problem in rewiring the timer, refer to the wiring diagram located on the underside of the cabinet top.

TIMER DIAL REMOVAL

Remove the setscrew holding the timer dial to the timer shaft and remove the timer dial.

TIMER MOUNTING PLATE REMOVAL

Remove the two screws holding the timer mounting plate to the front of the timer.

4. CYCLE SWITCHES

a. Remove the two screws holding the cabinet top rear corner tabs to the rear cross channel of the washer.

(continued)

b. Lift up on the back portion of the cabinet top and slide the top forward to disengage the cabinet top from the hold down tabs on the top flange of the front panel.
c. Lift the cabinet top off the washer.
d. Remove the two screws holding the selector switch assembly to the U-bracket mounted to the backside of the front panel.
e. Loosen the bottom screws holding the selector switch assembly to the lower bracket. Do not remove the bottom screw. We recommend that before sliding the switch assembly up, bend it slightly to the rear so that the buttons clear the front panel and the assembly can be pulled up and out of the washer.

IMPORTANT: When replacing the switch assembly, do a wire-for-wire exchange, or write down all of the wire terminal connections before removing any wires. If you have a problem, refer to the wiring diagram on the underside of the cabinet top.

NOTE: When reinstalling the switch, be sure that the screw head and washer are behind the bottom of the switch plate assembly. The switch must be aligned through the panel before putting the screw back in and tightened.

5. CARD READER (Models WX50130 and WX50330)

a. Remove the two screws holding the cabinet top rear corner tabs to the rear cross channel of the washer.
b. Lift up on the back portion of the cabinet top and slide the top forward to disengage the cabinet top from the hold down tabs on the top flange of the front panel.
c. Lift the cabinet top off the washer.
d. Remove the four screws, washers and nuts holding the card reader to the washer front panel.
e. Disconnect wires from card reader.

IMPORTANT: Before removing wires from the card reader, mark the terminal connection and the wire number so the wires can be reinstalled correctly.

f. Carefully remove the card reader out through the opening in the front panel.

6. REVERSING TIMER (Models WX50130 and WX50330)

a. Remove the two screws holding the cabinet top rear corner tabs to the rear cross channel of the washer.
b. Lift up on the back portion of the cabinet top and slide the top forward to disengage the cabinet top from the hold down tabs on the top flange of the front panel.
c. Lift the cabinet top off the washer.
d. Remove the two screws, lockwashers and plain washers holding the timer to the mounting bracket.
e. Disconnect wires from reversing timer.

IMPORTANT: Before disconnecting wires from the timer, write down the timer terminal connection and the wire numbers so the timer can be rewired correctly.

7. CONTACTORS (Wash or Spin)

a. Remove the two screws holding the cabinet top rear corner tabs to the rear cross channel of the washer.
b. Lift up on the back portion of the cabinet top and slide the top forward to disengage the cabinet top from the hold down tabs on the top flange of the front panel.
c. Lift the cabinet top off the washer.
d. Use a small flat blade screwdriver and move the side tab out (located on left side of the contactor) and carefully remove contactor off rail.
e. Disconnect wires from contactor.

IMPORTANT: Before removing wires from contactor, mark the terminal connectors and the wire number so the wires can be reinstalled correctly.

8. RELAY (Manual, Spin, Dispenser or Drain) (Models WX50130 and WX50330)

a. Remove the two screws holding the cabinet top rear corner tabs to the rear cross channel of the washer.
b. Lift up on the back portion of the cabinet top and slide the top forward to disengage the cabinet top from the hold down tabs on the top flange of the front panel.
c. Lift the cabinet top off the washer.
d. Remove the relay by pulling straight up and out of the socket.

NOTE: When reinstalling the relay, be sure the tab, located on the center spindle of the relay, lines up with the notch in the base.

9. DECELERATION TIMING DEVICE (Models WX50130 and WX50330)

a. Remove the two screws holding the cabinet top rear corner tabs to the rear cross channel of the washer.
b. Lift up on the back portion of the cabinet top and slide the top forward to disengage the cabinet top from the hold down tabs on the top flange of the front panel.
c. Lift the cabinet top off the washer.
d. Remove the timing device by pulling straight up and out of the socket.

NOTE: When reinstalling the timing device, be sure the tab, located on the center spindle, lines up with the notch in the base.

10. PRESSURE SWITCH

a. Remove the two screws holding the cabinet top rear corner tabs to the rear cross channel of the washer.
b. Lift up on the back portion of the cabinet top and slide the top forward to disengage the cabinet top from the hold down tabs on the top flange of the front panel.
c. Lift the cabinet top off the washer.
d. Remove the screw and washer holding the pressure switch to rear tab on control mounting tray.
e. Disconnect the pressure hose from the pressure switch.

IMPORTANT: Before disconnecting wires from the pressure switch, write down the switch terminal connections and the wire numbers so the switch can be rewired correctly.

f. Tape pressure hose to top side of outer tub to prevent hose from falling to washer base.

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

11. INLET VALVE (Hot Water-Two Track Valve)

NOTE: Turn off water supply to the washer.

a. Remove the two screws holding the cabinet top rear corner tabs to the rear cross channel of the washer.
b. Lift up on the back portion of the cabinet top and slide the top forward to disengage the cabinet top from the hold down tabs on the top flange of the front panel.
c. Lift the cabinet top off the washer.
d. Remove the hot water inlet hose from the brass adapter at the rear of the washer.
e. Remove the brass adapter from the hot water inlet valve.

IMPORTANT: Before removing wires from solenoids, mark the terminal connections, and the wire number so the wires can be reinstalled correctly.

f. Mark the internal hoses so they can be reinstalled on the correct valve outlet.
g. Loosen hose clamps and remove the hoses from the valve.
h. Remove screws holding inlet valve to the rear cross channel and remove valve from inside of washer.

12. INLET VALVE (Cold Water-Single Track Valve)

NOTE: Turn off the water supply to the washer.

a. Remove the two screws holding the cabinet top rear corner tabs to the rear cross channel of the washer.
b. Lift up on the back portion of the cabinet top and slide the top forward to disengage the cabinet top from the hold down tabs on the top flange of the front panel.
c. Lift the cabinet top off the washer.
d. Remove the cold water inlet hose from the brass adapter at the rear of the washer.
e. Remove the brass adapter from the inlet valve.

IMPORTANT: Before removing wires from solenoid, mark the terminal connection and the wire number so the wires can be reinstalled correctly.

f. Remove the ground wire from the inlet valve.

⚠ CAUTION

Whenever ground wires are removed during servicing, those ground wires must be reconnected to insure the washer is properly grounded.

SOLENOID REMOVAL

a. Loosen the five screws holding solenoids and mounting plate to inlet valve body. DO NOT remove the screws.
b. Push coils toward rear of mounting plate and lift up. Coils will come off plunger assembly.

DIAPHRAGM REMOVAL

a. Remove the five screws holding solenoids and mounting plate to inlet valve body.
b. Lift solenoids and mounting plate off the valve body.
c. Remove the armature and guide from valve body, then remove diaphragm from valve body.

13. DISPENSER

a. Remove the two screws holding the cabinet top rear corner tabs to the rear cross channel of the washer.
b. Lift up on the back portion of the cabinet top and slide the top forward to disengage the cabinet top from the hold down tabs on the top flange of the front panel.
c. Lift the cabinet top off the washer.
d. Loosen the clamps holding the hoses to the dispenser and remove the dispenser.

NOTE: Mark all hoses and their appropriate connection so they can be reinstalled correctly. When reinstalling hoses to the dispenser, DO NOT overtighten the hose clamps. If you do, water will shoot out of the dispenser lid.

14. DOOR OPEN LIGHT

a. Remove the two screws holding the cabinet top rear corner tabs to the rear cross channel of the washer.
b. Lift up on the back portion of the cabinet top and slide the top forward to disengage the cabinet top from the hold down tabs on the top flange of the front panel.
c. Lift the cabinet top off the washer.
d. Disconnect wires from door open light.

NOTE: Before removing wires from the door open light, mark the terminal connection and the wire number so the wires can be reinstalled correctly.

e. Bend the tabs on the four corners of the light and push the light out through the front of the control panel.

15. RUN LIGHT

a. Remove the two screws holding the cabinet top rear corner tabs to the rear cross channel of the washer.
b. Lift up on the back portion of the cabinet top and slide the top forward to disengage the cabinet top from the hold down tabs on the top flange of the front panel.
c. Lift the cabinet top off the washer.
d. Disconnect wires from the run light.

NOTE: Before removing wires from the run light, mark the terminal connection and the wire number so the wires can be reinstalled correctly.

e. Using a Tru-Arc pliers, remove the Tru-Arc ring holding the run light to the control panel.

16. SIPHON BREAK

a. Remove the two screws holding the cabinet top rear corner tabs to the rear cross channel of the washer.
b. Lift up on the back portion of the cabinet top and slide the top forward to disengage the cabinet top from the hold down tabs on the top flange of the front panel.
c. Lift the cabinet top off the washer.

NOTE: Label all hoses and their appropriate nipple on the siphon break before removing the hoses.

d. Loosen hose clamps and carefully remove all hoses from the siphon break.

IMPORTANT: Use a hair dryer or similar heating device to heat the ends of the hoses where they attach to the siphon break. This will help loosen the hoses and prevent the nipples on the siphon break from breaking off when the hoses are removed.

Pull hoses straight off the nipples. If you do not, the nipples may break off the siphon break.

e. Remove the four screws holding the grid and gasket to the rear channel and remove the grid and gasket.
f. Remove the screw holding the siphon break to the rear channel and remove the siphon break and gasket from the rear channel.

17. RESET – SINGLE PHASE MODELS

a. Remove the two screws holding the cabinet top rear corner tabs to the rear cross channel of the washer.
b. Lift up on the back portion of the cabinet top and slide the top forward to disengage the cabinet top from the hold down tabs on the top flange of the front panel.
c. Lift the cabinet top off the washer.
d. Disconnect the wires to the reset.

NOTE: Before removing wires from the reset, mark the terminal connections and the wire numbers so the wires can be reinstalled correctly.

e. Turn the nut off the reset and remove the reset out through the top.

18. LOADING DOOR

a. Use the special door open tool (supplied with washer) and unlock the door by pushing the pin on the tool up through the hole in the bottom side of the door bracket, and at the same time, move the door handle down to unlock the door. Unscrew the round plug from the front of the door bracket using the special plug key (supplied with the washer).
b. Loosen the locknut on the setscrew (located inside the hole in the door bracket) and remove the setscrew.
c. Remove the large nut holding the door to the door bracket. Thread the complete door assembly off the large bolt on the door bracket.

19. DOOR LOCK ASSEMBLY OR SAFETY LOCK COIL AND BRACKET

a. Use the special door open tool (supplied with washer) and unlock the door by pushing the pin on the tool up through the hole in the bottom side of the door bracket, and at the same time, move the door handle down to unlock the door. Unscrew the round plug from the front of the door bracket using the special plug key (supplied with the washer).
b. Loosen the locknut on the setscrew (located inside the hole in the door bracket) and remove the setscrew.
c. Remove the large nut holding the door to the door bracket. Thread the complete door assembly off the large bolt on the door bracket.
d. Remove the six screws holding the safety lock coil and mounting bracket to the door bracket.
e. Disconnect wires from the door mechanism.

IMPORTANT: Before disconnecting the wires from the door mechanism, write down the terminal connections and the wire number so the door mechanism can be rewired correctly.

20. DOOR SAFETY SWITCH

a. Use the special door open tool (supplied with washer) and unlock the door by pushing the pin on the tool up through the hole in the bottom side of the door bracket, and at the same time, move the door handle down to unlock the door. Unscrew the round plug from the front of the door bracket using the special plug key (supplied with the washer).
b. Remove the two small nuts holding the door safety switch and plate to the door bracket.
c. Pull switch and plate out of door bracket far enough to permit disconnecting of wires from switch terminals.

IMPORTANT: Before disconnecting wires from switch terminals, write down the switch terminal connections and the wire numbers so switch can be rewired correctly.

d. Remove the large nut holding the door safety switch to the switch plate.

21. DOOR GASKET

a. Peel the old door gasket from the door frame channel.

NOTE: If the old gasket was adhered to the door frame, it will require scraping of the old adhesive before installing the new door gasket. Clean and dry the door frame channel.

b. Apply a bead (⅛" diameter) of a good quality water and temperature resistant silicone sealer (RTV) to the door frame gasket channel.

DOOR GASKET INSTALLATION

c. **No. G132167 Door Gasket —** Locate the split in the outer edge of the new gasket. Place the narrow lip into the door frame channel and push the gasket into position. Use a screwdriver or similar tool to reach through the split in the gasket. Use the tool to seat gasket into the channel and seal all the way around. Seat the thicker lip of the gasket into the channel.

IMPORTANT: When installing the door gasket, the seam MUST be positioned in either the three o'clock or nine o'clock position. If it is not in either of these positions the gasket will leak.

No. G182642 Door Gasket — Turn the new door gasket one quarter turn so the wide part of the gasket is facing you. Carefully tuck the new door gasket into the door frame channel.

IMPORTANT: When installing the door gasket, the seam MUST be positioned at twelve o'clock. If it is not in this position, the gasket will leak.

22. OUTER TUB FRONT PANEL

a. Remove the two screws holding the cabinet top rear corner tabs to the rear cross channel of the washer.
b. Lift up on the back portion of the cabinet top and slide the top forward to disengage the cabinet top from the hold down tabs on the top flange of the front panel.
c. Lift the cabinet top off the washer.
d. Disconnect the four wires from the door lock assembly to the terminal block.

(continued)

NOTE: Wire connection from the right to the left is "L1" first position, "55" second position, "207" third position and "56" fourth position.

e. Disconnect the green ground wire from the control panel plate.

⚠ CAUTION

Whenever ground wires are removed during servicing , those ground wires must be reconnected to insure the washer is properly grounded.

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f. Remove the two screws holding the nameplate cover to the front of the washer and remove the nameplate cover.
g. With nameplate removed, mark door panel at a position on the front panel to assist with installation of door panel.
h. Pull the door lock wires out through the opening in the front panel.
i. Remove the bolt, washers and nut holding the clamp ring to the front of the washer and remove the clamp ring.
j. While supporting the outer tub front panel and door assembly, carefully remove the gasket.
k. Carefully remove the outer tub front panel and door assembly from the washer.

TO INSTALL THE OUTER TUB FRONT PANEL

IMPORTANT: When reinstalling outer tub front panel and loading door, line up the two panels where they were marked during disassembly, see step "g", or use a tape measure to measure the distance from the top of the door arm to the top of the control panel. With the door arm horizontal to the control panel, the distance should be 22 inches from the top of each end of the door arm to the top of the control panel.

IMPORTANT: Reinstallation of the outer tub front panel MUST be done with two people.

a. Position and support the outer tub front panel (with door attached) to the front of the outer tub. Use spacers approximately the same thickness as the center rib of the clamp ring gasket. Place spacers at the 4 o'clock and 8 o'clock positions between the outer tub lip and the outer tub front panel. Clamp into position using clamping pliers.

   Starting at the 12 o'clock position, install the clamp ring gasket. The gasket has two grooves, one groove goes over the outer tub lip and the other goes over the outer tub front panel lip. After installing approximately six inches of gasket, clamp the gasket, outer tub and outer tub front panel with a clamping pliers at the starting point. Continue to install the gasket until you are at the clamping pliers and spacer near the 4 o'clock position. Once again clamp the gasket, outer tub and outer tub front panel with a clamping pliers before removing clamping pliers and spacer at the 4 o'clock position. Proceed in this manner until the gasket is completely installed.

   While one person holds the outer tub front panel in position, the second person can remove the clamping pliers and install the clamp ring.
b. With the gasket in place, start at the top and place the clamp ring around the clamp ring gasket. The tabs on the clamp ring should be one quarter of the way into the bracket on the front panel. Do not tighten the clamp ring at this time.
c. With the door assembly lined up correctly (22 inch measurement), begin tapping the clamp ring with a rubber or vinyl mallet all the way around to pull the two sides of the clamp together.
   Begin tightening the clamp ring using the bolt, washers and nut. Continue to tap around the outer edge of the clamp ring as the bolt is being tightened to insure a water tight seal.
e. Route the four wires and the ground wire from the door switch mechanism through the hole in the front panel and up into the control tray.

NOTE: Be sure the insulating tube is in the hole in the front panel to protect the wires.

f. Reconnect the wires to the terminal block.

NOTE: Wire connection from the right to the left is "L1" first position, "55" second position, "207" third position and "56" fourth position.

g. Attach the nameplate housing to the washer with the two screws.
h. Reinstall the cabinet top.

23. FRONT PANEL

a. Remove the two screws holding the cabinet top rear corner tabs to the rear cross channel of the washer.
b. Lift up on the back portion of the cabinet top and slide the top forward to disengage the cabinet top from the hold down tabs on the top flange of the front panel.
c. Lift the cabinet top off the washer.
d. Remove the six screws holding the control panel to the cabinet.
e. Pull control panel forward exposing the door open switch and run light.
f. Using a Tru-Arc pliers, remove the Tru-Arc ring holding the run light to the control panel.

g. Disconnect the wires from the light, then bend the tabs on the four corners of the light and push the light out through the front of the control panel.

NOTE: Before removing wires from the switch and light, mark the terminal connections and the wire numbers so the wires can be reinstalled correctly.

h. Models WX50130 and W50330 — Remove card reader, *paragraph 5.*
i. Remove screws, lockwashers and nuts holding bottom edge of front panel to chassis and remove the front panel.

24. REAR PANEL

a. Remove screws holding the rear panel to the cabinet and remove the rear panel.

25. BELT

a. Remove screws holding the rear panel to the cabinet and remove the rear panel.
b. Use a piece of two-by-four or something similar for leverage to lift the motor while running the belts off the pulley. Once the belts have been removed from the pulley, lower the motor gradually. DO NOT let it drop or you could damage the motor.

26. CYLINDER PULLEY ASSEMBLY

a. Remove screws holding rear panel to cabinet and remove rear panel.
b. Use a piece of two-by-four or something similar for leverage to lift the motor while running the belt off the pulley. Once the belt has been removed from the pulley, lower the motor gradually. DO NOT let it drop or you could damage the motor.

NOTE: Block cylinder at front of washer to keep the cylinder from rotating when removing pulley bolt and pulley.

c. Using a 22mm socket, remove the large bolt holding the pulley to the cylinder shaft and remove the lockwasher and washer.
d. With the No. G171215 Bolt screwed into the No. G171462 Pulley Plate, attach the pulley plate to the tapped holes in the pulley hub with two bolts, No. G146530, washers, No. G149500, and nuts No. G150193. The washers, No. G149500, go between the nut and the pulley plate (see *Page 27*). Use an 18mm wrench to turn the nuts tight against the pulley plate.
e. Turn the large bolt **clockwise** to pull the pulley off the shaft.

PULLEY INSTALLATION

a. Insert the No. G171264 Puller Allen Fitting into the No. G171439 Puller Bolt approximately one inch.

NOTE: Install the puller allen fitting into the puller bolt with the allen hex end extending out from the puller bolt.

b. Insert the pulley key onto the shaft and start the pulley onto the shaft with a hammer.
c. Screw the No. G171439 Puller Bolt, with the G171264 Puller Allen Fitting, into the cylinder shaft.
d. Insert the No. G171454 Handle into the No. G171447 Puller Nut and turn the drive nut **clockwise** to push the pulley on the shaft.
e. When the pulley is seated firmly on the shaft, install the large washer, lockwasher and bolt into the shaft and tighten firmly.

27. WASH BASKET CYLINDER AND SHAFT

a. Remove the two screws holding the cabinet top rear corner tabs to the rear cross channel of the washer.
b. Lift up on the back portion of the cabinet top and slide the top forward to disengage the cabinet top from the hold down tabs on the top flange of the front panel.
c. Lift the cabinet top off the washer.
d. Remove the outer tub front panel, with door attached, *paragraph 22.*
e. Remove screws holding rear panel to cabinet and remove panel.
f. Remove belts and cylinder pulley, *paragraphs 25 and 26.*
g. Remove key, locknut and lockwasher from shaft.
h. Attach No. G171645 Centering Ring to No. G171520 Hub with No. G144303 Allen Screws.
i. Turn the No. G150193 Nuts onto the three No. G146563 Screws and attach the hub (with the centering ring attached) to the bearing housing. Once the bolts are tight, turn the No. G150193 Nuts tight against the hub (see *Page 27).*
j. Thread the No. G171215 Bolt into the housing through the hub and centering ring.

NOTE: Block the cylinder at front of washer to keep it from rotating.

k. Turn the bolt **clockwise** to push the cylinder and shaft out through the front of the washer. Carefully remove the cylinder and shaft assembly from the washer.

(continued)

CYLINDER AND SHAFT DISASSEMBLY

a. Remove the gland from the shaft.
b. Remove the V-seal from the outside of the gland, and remove the O-rings and flat gasket from the shaft.
c. Remove the cylinder coupler from the basket by removing the three nuts and washers from the studs attaching the coupler to the cylinder.
d. Remove the shaft from the wash basket cylinder by removing the lockwasher and locknut located at the base of the shaft.

ASSEMBLY OF CYLINDER AND SHAFT

IMPORTANT: We recommend installing new "O" rings, "V" seal and flat gasket whenever cylinder and shaft assembly are removed. Lubricate inside of "O" rings before installing. Make sure new "O" rings are not cut or damaged and are in their normal (not inside out) position when in place. Apply a bead of sealant, such as Dow Corning Silastic® 732-RTV or equivalent (these are clear silicone sealants), around the entire area where the gland and the flange on the shaft meet.

a. Install new flat washer.
b. Install new "O" rings on shaft. See **Important** above.
c. Install gland on shaft.
d. Install new "V" seal.
e. Place key in slot of shaft, then insert cylinder shaft into cylinder coupler.
f. Install lockwasher and locking nut.

IMPORTANT: After locking nut has been tightened, bend at least two locking tabs on lockwasher into place on nut.

g. Place the cylinder shaft and coupler over the rib rods protruding through the rear of cylinder. Secure coupler to cylinder using washers and nuts.

28. BEARING HOUSING AND SEAL HOUSING

a. Bearing Housing and Seal Housing Removal:

1. Remove cylinder and shaft assembly, *paragraph 27.*
2. Using a 13mm socket, remove 16 nuts and eight washers holding plate to inside of outer tub.

IMPORTANT: Before removing nuts and washers, lay a cloth over the drain housing so nuts and washers do not fall into the drain housing.

3. Pry the plate off the inside of the outer tub.
4. Remove the eight nuts and four washers holding the bearing housing to the back of the chassis.
5. Pull bearing housing off the back of the chassis.

⚠WARNING

To reduce the risk of personal injury, use care when removing the bearing housing from the rear of the washer as the bearing housing is very heavy.

6. Remove seal housing.

b. Bearing Housing Disassembly:

1. Insert No. G171397 Punch Bar into No. G171652 Bearing Punch and tighten with No. G144055 Allen Screw. Insert punch bar with bearing punch through center of front bearing and drive rear bearing out of housing.
2. Reverse the housing and place a nut on each of the four bearing housing studs to protect the threads.
3. Drop the No. G171660 Sleeve into the bearing housing cavity, making sure it is seated evenly. Drive the front bearing out of the housing with the punch bar and sleeve.

c. Seal Housing Disassembly:

NOTE: Inspect seal housing for any signs of wear or leakage and replace worn parts if necessary.

1. Pry seal from seal housing.
2. Install new seal in seal housing and seat firmly with No. G171504 Plate Handle and No. G171488 Seal Plate.

NOTE: When replacing seal, we recommend installing new bearings also.

NOTE: When installing new seal, apply a retaining compound (such as Loctite) to the outside diameter of the seal to assure a water tight seal. Lubricate inside diameter of seal with No. 21814 Lubricant.

d. Assembly of Bearing Housing:

NOTE: Apply a retaining compound (such as Loctite) to outside diameter of bearings before installing bearings into bearing housing.

1. Install front bearing first.
2. Thread No. G171504 Plate Handle into No. G171678 Bearing Seal Plate.
3. Install front bearing flat into bearing housing cavity. Place plate handle with bearing seal plate over bearing and seat bearing in housing by pounding on plate handle with a hammer.

e. Bearing Housing Installation:

NOTE: The rear bearing is installed after the cylinder and shaft have been pulled through the front bearing and housing.

1. Insert seal housing onto the bearing housing assembly.
2. Place bearing assembly onto back of chassis, making sure the elbow and seal drain hose come out bottom of assembly.
3. Secure the bearing housing to the chassis with the eight nuts and four washers and tighten the nuts evenly and firmly.
4. Place the seal plate over the eight bolts inside the outer tub and secure the seal plate with a washer and two nuts on each bolt.

f. Wash Basket Cylinder and Shaft Installation:

1. Insert the wash basket cylinder and shaft assembly into the bearing housing from the front of the washer through the outer tub. Run the basket and shaft in as straight as possible to prevent damage to the seals.
2. Mount the No. G171520 Hub to the bearing housing with three No. G146563 Screws.
3. Insert an allen wrench into the No. G171264 Puller Allen Fitting and turn the puller allen fitting into the No. G171439 Puller Bolt approximately one inch.

NOTE: Install the puller allen fitting into the puller bolt with the allen hex end extending out from the puller bolt.

4. Screw the No. G171447 Puller Nut onto the No. G171439 Puller Bolt.
5. Screw the puller bolt, with the puller allen fitting, into the cylinder shaft until the puller bolt locks in against the cylinder shaft.

NOTE: Block the cylinder at front of washer to prevent the cylinder from rotating while pulling cylinder and shaft into bearing housing.

6. Turn the No. G171447 Puller Nut **clockwise** to pull the cylinder shaft through the bearing housing to properly position the wash basket cylinder. Turn the puller nut until the cylinder is properly seated against the front bearing.
7. Loosen the puller nut and completely remove the puller bolt, with the puller allen fitting, from the cylinder shaft.

g. Rear Bearing Installation:

NOTE: Install rear bearing after wash basket cylinder and shaft assembly is installed.

1. Remove the No. G171520 Hub from the bearing housing. Place the rear bearing onto the shaft and center the bearing over the opening in the bearing housing.
2. Place the No. G171520 Hub back onto the bearing housing, over the cylinder shaft.
3. Screw the No. G171439 Puller Bolt, with the puller allen fitting, into the cylinder shaft.
4. Using the No. G171454 Handle, turn the puller nut up tight against the hub. Turn the puller nut **clockwise** until the rear bearing is seated firmly in the bearing housing.
5. Remove the puller bolt, with the puller allen fitting from the cylinder shaft.
6. Install lockwasher and locking nut on cylinder shaft and tighten nut firmly.

IMPORTANT: After locking nut has been tightened, bend at least two locking tabs on lockwasher into place on nut.

h. Cylinder Pulley Installation:

1. Insert the No. G171264 Puller Allen Fitting into the No. G171439 Puller Bolt approximately one inch.

NOTE: Install the puller allen fitting into the puller bolt with the allen hex end extending out from the puller bolt.

2. Insert the pulley key onto the shaft and start the pulley onto the shaft with a hammer.
3. Screw the No. G171439 Puller Bolt with No. G171264 Puller Allen Fitting into the cylinder shaft.
4. Insert the No. G171454 Handle into the No. G171447 Puller Nut and turn the drive nut **clockwise** to push the pulley onto the shaft.
5. When the pulley is seated firmly onto the shaft, install the large washer, lockwasher and bolt into the shaft and tighten firmly.

29. SIDE PANELS (Right or Left)

a. Remove the two screws holding the cabinet top rear corner tabs to the rear cross channel of the washer.
b. Lift up on the back portion of the cabinet top and slide the top forward to disengage the cabinet top from the hold down tabs on the top flange of the front panel.
c. Lift the cabinet top off the washer.
d. Remove screws and washers holding rear panel to chassis and remove rear panel.
e. Remove screws and washers holding side panels to chassis and remove side panels.

30. OUTER TUB

a. Remove cabinet top, *paragraph 1,* rear panel, *paragraph 24* and side panels, *paragraph 29.*
b. Remove control panel, *paragraph 2.*
c. Remove belts and pulley, *paragraphs 25 and 26.*
d. Remove outer tub front panel, *paragraph 22,* and front panel, *paragraph 23.*
e. Remove wash basket cylinder and shaft assembly, *paragraph 27.*
f. Loosen all clamps and remove all hoses from outer tub.
g. Remove setscrew, washer and nut holding front of outer tub to each side of chassis.
h. Remove eight setscrews, washers and nuts holding outer tub to chassis and remove outer tub from chassis.

31. MOTOR

NOTE: Disconnect ground wire before removing motor.

⚠ CAUTION

Whenever ground wires are removed during servicing, those ground wires must be reconnected to insure that the washer is properly grounded.

a. Remove screws holding rear panel to cabinet and remove panel.
b. Use a piece of two-by-four or something similar to use for leverage to lift the motor while running the belts off the pulley. Once the belts have been removed from the pulley, lower the motor gradually, DO NOT let it drop or you could damage the motor.
c. Remove the nuts, screws and washers holding the motor bracket to the bottom of the chassis assembly.
d. Disconnect the motor harness plug.

⚠WARNING

To reduce the risk of personal injury, use care when removing the motor out the rear of the washer as the motor is very heavy.

e. Remove the motor by grasping the motor bracket shaft and carefully remove the motor out the rear of the washer.

NOTE: On Single Phase Models Only — Disconnect the two wires from the centrifugal switch at the rear of the motor. Make sure you mark the terminal connections and the corresponding wire number so the wires can be reinstalled correctly.

IMPORTANT: We recommend that you take the motor and motor bracket assembly to a machine shop and have the motor bracket shaft pressed out. Have the new motor installed on the motor bracket and the shaft pressed back into the motor and bracket. If this is not done, you could end up damaging the new motor.

32. CAPACITORS

⚠WARNING

To reduce the risk of an electric shock, disconnect electrical power to washer before working with the capacitors.

a. Remove screws and washers holding rear panel to cabinet and remove rear panel.
b. Use a piece of two-by-four or something similar to use for leverage to lift the motor while running the belts off the pulley. Once the belts have been removed from the pulley, lower the motor gradually, DO NOT let it drop or you could damage the motor.

⚠WARNING

Before handling capacitors and to reduce the risk of an electric shock, discharge the capacitors using a resistor rather than shorting.

c. Remove the two screws holding the capacitor bracket to the chassis.
d. Remove capacitor from capacitor bracket by removing the nut holding the capacitor to the bracket and pulling the capacitor out.

NOTE: Record the wiring sequence to the capacitors before removing any wires connected to them. Remember to discharge the insulated terminals after they are taken off the capacitors.

33. PRESSURE BULB

a. Remove screws holding rear panel to cabinet and remove rear panel.
b. Loosen hose clamp and remove the pressure bulb from the large nipple on the back of the outer tub.
c. Disconnect the pressure hose from the pressure bulb by pulling the hose out of the connector at the top of the pressure bulb.

34. DRAIN VALVE

a. Remove screws holding rear panel to cabinet and remove rear panel.
b. Loosen hose clamps and remove drain elbow, overflow hose and drain hose from drain valve.
c. Disconnect the wires from the drain valve motor.
d. Remove the two screws attaching the drain valve to the rear chassis brace and remove the drain valve.

35. FUSE HOLDER AND RESISTOR ASSEMBLY

a. Remove the two screws holding the cabinet top rear corner tabs to the rear cross channel of the washer.
b. Lift up on the back portion of the cabinet top and slide the top forward to disengage the cabinet top forward to disengage the cabinet top from the hold down tabs on the top flange of the front panel.
c. Lift the cabinet top off the washer.
d. Turn the nut off the barrel of the fuse holder and pull the fuse holder out through the rear channel.

36. TERMINAL BLOCK

a. Remove the two screws and washers holding the terminal block access cover to the rear cross channel and remove access cover.
b. Disconnect wires from terminal block.

IMPORTANT: Label terminals and appropriate wires before disconnecting so wires can be reinstalled correctly.

c. Remove terminal block by removing screw and washer holding terminal block to inside of rear channel.

SECTION III
Service Helps

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

37. NO HOT WATER

POSSIBLE CAUSE	TO CORRECT
Water in hot water tank is cold.	
Hot water supply line is closed.	Check for closed valve, kinked hose, or obstruction in line.
Clogged inlet valve screens.	Remove and clean or replace screens.
Thermostat improperly set or inoperative.	Set appropriate thermostat or replace thermostat if inoperative.
Inoperative hot water valve.	Check valve and replace if inoperative.
Models WX50120 and WX50320: Inoperative timer assembly.	Check timer contacts. Replace timer if contacts are inoperative.
Models WX50120 and WX50320: Inoperative pressure switch.	Check pressure switch and replace if inoperative.
Models WX50130 and WX50330: No water entering cylinder.	Check track "D" on card and switch "JD" on card reader, or track "G" and "B" or track "G" and "C" if thermostat is selected.
Broken, loose or incorrect wiring.	Refer to wiring diagram.

38. NO COLD WATER

POSSIBLE CAUSE	TO CORRECT
Cold water supply line is closed.	Check for closed valve, kinked hose, or obstruction in line.
Clogged inlet valve screen	Remove and clean or replace screens.
Thermostat improperly set or inoperative.	Set appropriate thermostat or replace if inoperative.
Inoperative cold water valve.	Check valve and replace if inoperative.
Models WX50120 and WX50320: Inoperative timer assembly.	Check timer contacts. Replace timer assembly if contacts are inoperative.
Models WX50120 and WX50320: Inoperative pressure switch.	Check pressure switch and replace if inoperative.
Models WX50130 and WX50330: No water entering cylinder.	Check track "G" on card and switch "JG" on card reader.
Broken, loose or incorrect wiring.	Refer to wiring diagram.

39. NO WARM WATER

POSSIBLE CAUSE	TO CORRECT
No hot water.	Refer to *paragraph 37.*
No cold water.	Refer to *paragraph 38.*

40. WASHER DOES NOT START AND THE PUSH BUTTON "ON/OFF" IS ON

POSSIBLE CAUSE	TO CORRECT
Electric power disconnected or tripped breaker or fuse blown. One Amp control fuse(s) blown.	Connect electrical power or replace breaker or fuse(s). Check the washer's one Amp fuse and replace if blown. Fuse is located behind the terminal block access cover on the rear cross channel. Starting with Serial No. G0550485 for Models WX50120 and WX50130 and G0565120 for Models WX50320 and WX50330, the washer is equipped with two one Amp fuses which are located behind the terminal block access cover on the rear cross channel.
3.9 Ohm resistor open.	Replace fuse holder and resistor assembly.
Models WX50120 and WX50320: Inoperative rapid advance switch.	Test switch and replace if inoperative.
Inoperative on/off switch.	Test switch and replace if inoperative.
Models WX50130 and WX50330: End of cycle.	Check track "L" on card and switch "JL" on card reader.
Door lock switch is inoperative or is not closed.	Check door lock assembly and replace if inoperative. Check door latch to ensure proper switch engagement.
Door safety switch is inoperative or is not tripped.	Check door lock assembly and replace if inoperative. Check door latch to ensure proper switch engagement.
Motor overload protector has cycled.	Wait 15 to 30 minutes for overload protector to reset. If protector cycles repeatedly, refer to *paragraph 46.*
One Phase Models: Reset (located on the rear cross channel) has tripped.	Press the button to reset.
Models WX50120 and WX50320: Inoperative timer.	Test timer start circuit. Replace timer if inoperative.
Models WX50120 and WX50320: Inoperative reversing timer.	Replace timer assembly.
Models WX50130 and WX50330: Inoperative reversing timer.	Test reversing timer contacts. Replace timer if inoperative.
Models WX50130 and WX50330: Inoperative reversing timer motor.	Replace reversing timer assembly.
Broken, loose or incorrect wiring.	Refer to the wiring diagram.

41. CYLINDER DOES NOT FILL

POSSIBLE CAUSE	TO CORRECT
No hot water.	Refer to *paragraph 37.*
No cold water.	Refer to *paragraph 38.*
Inoperative pressure switch.	Check switch and replace if inoperative.
Models WX50120 and WX50320: Inoperative timer.	Check timer and replace if inoperative.
Models WX50130 and WX50330: Improper card program.	Track "G" and "D" must be cut to get fill, also tracks "A", "L" and "F" will override track "G" and "D".
Inoperative drain valve.	Check drain valve and replace if inoperative.
Obstruction in drain valve.	Clean drain valve, refer to the parts section for assembly sequence of valve.
Clogged inlet valve screens.	Remove inlet hoses from inlet valve and clean or replace screens.
Inoperative inlet valve.	Check inlet valve solenoids for proper operation, replace if inoperative.
Inoperative selector switch.	Check switch and replace if inoperative.
Broken, loose or incorrect wiring.	Refer to the wiring diagram.

42. WATER DOES NOT SHUT OFF

POSSIBLE CAUSE	TO CORRECT
Sediment in inlet valve.	Disassemble and clean sediment from inlet valve or replace complete inlet valve.
Inoperative pressure switch.	Check switch and replace if inoperative.
Incorrect wiring.	Refer to wiring diagram.

43. WATER DOES NOT DRAIN FROM CLOTHES CYLINDER

POSSIBLE CAUSE	TO CORRECT
Obstruction in drain valve.	Disassemble and clean valve, refer to parts section for assembly sequence of valve.
Kinked drain hose.	Straighten drain hose.
Inoperative drain valve motor.	Check motor and replace if inoperative.
Models WX50120 and WX50320: Inoperative timer assembly.	Check timer and replace if inoperative.
Incorrect wiring.	Refer to wiring diagram.
Models WX50130 and WX50330: Inoperative drain relay.	Check electrical connection "C11" and replace if inoperative.
Models WX50130 and WX50330: Inoperative card.	Check track "A" on card and switch "JA" on card reader.

44. WASHER DOES NOT TUMBLE

POSSIBLE CAUSE	TO CORRECT
No electrical power.	Check fuses, switch outlet or power cord.
Models WX50120 and WX50320: Inoperative timer assembly.	Check timer and replace if inoperative.
Models WX50130 and WX50330: Inoperative reversing timer assembly.	Check reversing timer and replace if inoperative.
Models WX50120 and WX50320: Inoperative rapid advance switch.	Check "2" to "3" on switch — should be closed with switch not held in.
Inoperative spin contactor.	Check contactor "21" to "22" — should be closed when contactor is not operated
Door lock assembly improperly adjusted.	Adjust door lock assembly.
Motor overload protector has cycled.	Wait 15 to 30 minutes for overload protector to reset. If protector cycles repeatedly, refer to *paragraph 46.*
Inoperative capacitor(s) (One Phase Model).	Check capacitor(s) and replace if inoperative.
Inoperative drive motor (Wash/Spin).	Check motor and replace if inoperative.
Inoperative pressure switch.	Switch must be in the "normally closed" position. Check pressure hose to see if it is clogged preventing pressure switch from resetting. Check switch and replace if inoperative.
Inoperative motor contactor.	Check wash contactors and replace if inoperative.
Broken, loose or incorrect wiring.	Refer to wiring diagram.

45. WASHER DOES NOT SPIN

POSSIBLE CAUSE	TO CORRECT
No electrical power.	Check fuses, switch outlet or power cord.
Obstruction in drain valve.	Disassemble and clean valve.
Kinked drain hose.	Straighten drain hose.
Inoperative drain valve motor.	Check motor and replace if inoperative.
Incorrect wiring.	Refer to wiring diagram.
Models WX50130 and WX50330: Inoperative drain relay.	Check electrical connection "C11" and replace if inoperative.
Models WX50130 and WX50330: Inoperative card.	Check track "F" on card and switch "JF" on card reader.
Motor overload protector has cycled.	Wait 15 to 30 minutes for overload protector to reset. If protector cycles repeatedly, refer to *paragraph 46.*
Models WX50130 and WX50330: Inoperative spin relay.	Check "C8" spin relay and relay coil.
Inoperative "C3" or "C2" contactors.	Check "C3" or "C2" contactors.
Inoperative spin motor.	Replace spin motor.
Inoperative Pressure Switch.	Switch must be in the "normally closed" position. Check pressure hose to see if it is clogged preventing pressure switch from resetting. Check switch and replace if inoperative. Models WX50130 and WX50330: Check both pressure switches and replace if either are inoperative.
Models WX50130 and WX50330: Check water supply.	Cold water will be added to the cylinder before drain and spin will occur.
Broken, loose or incorrect wiring.	Refer to wiring diagram.

46. MOTOR OVERLOAD PROTECTOR CYCLES REPEATEDLY

POSSIBLE CAUSE	TO CORRECT
Low voltage.	See *Installation Instructions* (supplied with washer) for electrical requirements.
Inoperative motor overload protector.	Replace motor or overload protector.
Water does not drain from cylinder.	Refer to *paragraph 43.*
Inoperative contactor.	Check contactor and replace if inoperative.
Inoperative centrifugal switch (One Phase only.)	Check switch and replace motor if inoperative.

47. CYLINDER DOES NOT TURN

POSSIBLE CAUSE	TO CORRECT
Washer does not tumble.	Refer to *paragraph 44.*
Loose or broken belt.	Check belt tension or replace belt.

48. TIMER DOES NOT ADVANCE (Models WX50120 and WX50320)

POSSIBLE CAUSE	TO CORRECT
Inoperative timer motor.	Replace complete timer assembly.
Inoperative pressure switch.	Check switch and replace if inoperative.
Inoperative door switch.	Check switch and replace if inoperative.
Inoperative rapid advance switch.	Check switch and replace if inoperative.
Incorrect wiring.	Refer to wiring diagram.

49. DOOR WILL NOT OPEN

POSSIBLE CAUSE	TO CORRECT
Models WX50120 and WX50320: Inoperative timer contacts.	Replace timer.
No electrical power to door switches (control fuse(s) blown).	Check the washer's one Amp fuse and replace if blown. Fuse is located behind the terminal block access cover on the rear cross channel. Starting with Serial No. G0550485 for Models WX50120 and WX50130 and G0565120 for Models WX50320 and WX50330, the washer is equipped with two one Amp fuses which are located behind the terminal block access cover on the rear cross channel.
Door interlock not energized.	Check door lock and switch mechanism, and door latch hook for proper alignment and operation.
Inoperative door safety switch.	Check switch and replace if inoperative.
Broken, loose or incorrect wiring.	Refer to wiring diagram.

50. DOOR LEAKS

POSSIBLE CAUSE	TO CORRECT
Insufficient pressure on door gasket.	Adjust door.
Damaged gasket.	Replace gasket.

51. EXCESSIVE VIBRATION

POSSIBLE CAUSE	TO CORRECT
Unbalanced load in cylinder.	Stop washer, redistribute load, then restart washer.
Loosened mounting bolts.	Tighten bolts.
Loose cabinet screws.	Tighten screws.