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Section 1

PRIMARY SERVICE DATA

INSTALLATION REQUIREMENTS

All commercial washer installations should be made in accordance with all local and national building, electrical, plumbing, or other codes in effect in the area.

PLUMBING

Separate hot and cold plumbing lines with shut off valves or faucets for inlet hose connections should be installed. In addition, a hot water supply of 160°F. is recommended for effective washing results. For multiple unit installation, a water heating system with a circulating pump on the return hot water line will assure that each unit has hot water at the maximum temperature available. A mechanical pump on the incoming water lines is an asset to any commercial application. In excessively hard water areas, a water softener system is essential.

ELECTRICAL

The electrical power cord provided with each unit is equipped with a male type 3 prong plug. The round terminal pin on the plug is the ground. A UL approved receptacle, which has been properly grounded in accordance with local electrical codes, must be made available to each unit to receive this 3 prong plug. Each unit should be individually fused with at least a 15 amp. fuse. Individual circuits facilitate maintenance procedure and permit arranging a balanced incoming power supply. A master control panel with an individual circuit breaker for each unit is recommended.

IMPORTANT: ALWAYS REMOVE THE POWER CORD FROM THE RECEPTACLE BEFORE SERVICING THE UNIT. THE POWER SUPPLY CORD CAN ONLY BE ASSEMBLED TO THE INTERNAL WIRES ONE WAY, THE MALE TERMINAL GOES TO THE BLACK WIRE AND THE FEMALE TERMINAL TO THE WHITE WIRE.

FOUNDATION

The commercial washer must be secured to a foundation of adequate construction. Care must be stressed with all foundation work to insure a stable unit installation, eliminating possibilities of excessive vibration. Reinforced concrete is recommended for all multiple washer installations.

A. PLATFORM

Concrete reinforced by angle bars is recommended for the washer platform. The concrete should have a water and alkali resistant finish. ½" anchor bolts, 8" long which are headed by a 4" fish plate or equal should be embedded in the concrete according to the bolt spacing dimensions of the washer. Be sure to extend the bolts out of the concrete sufficiently to secure the unit. (Refer to Figure 1-1.)

B. CONCRETE FLOOR

If the installation is to be made on an existing concrete floor, the concrete must be at least 2" thick. Lead type expansion anchors can be used for bolting down the washer. Drill holes with an appropriate size star drill 1½" deep. Undercut the bottom portion of the holes for proper expansion of the anchor. Place the anchor in the hole and expand the shell (Refer to Figure 1-2).

It should be remembered that concrete expansion anchors could be described as temperamental and that there are definite rules to be followed to insure proper results. Good concrete is essential; it must be of a consistency to prevent crumbling when it is drilled either with a star drill or a carboloy tipped power driven concrete drill. In addition, it must not crack under the pressure of the expanding shield.

The ideal expansion anchor installation is one in which the lead shield has expanded into the under-cut portion of the hole and therefore holds on the flare of the anchor rather than on the straight sides. Accordingly, care should be taken to obtain the expansion near the bottom of the hole. The lead shield should slip easily on the anchor; a few drops of oil may be necessary. The expansion tool should be driven cautiously at first, and extreme force should not be exerted until it is certain that the lead is expanding at the desired point. Undersized holes should never be tolerated.

Occasionally, it is possible to use an expansion anchor of this type in a good concrete floor even though it is not thick enough for the customary type of installation. When such a floor is found, it is possible to expand the anchors even though it is necessary to drill the hole completely through the floor. If such a situation is encountered, expand the anchor slightly before installing it, to prevent its turning in the hole. Place a half-inch pipe coupling over the lead shield and start the bolt in its thread. A flat washer under the head of the bolt will expand the lead shield in the hole without the necessity for driving on it. Extreme caution should be exercised in making an installation of this type and it should be used only in an emergency.

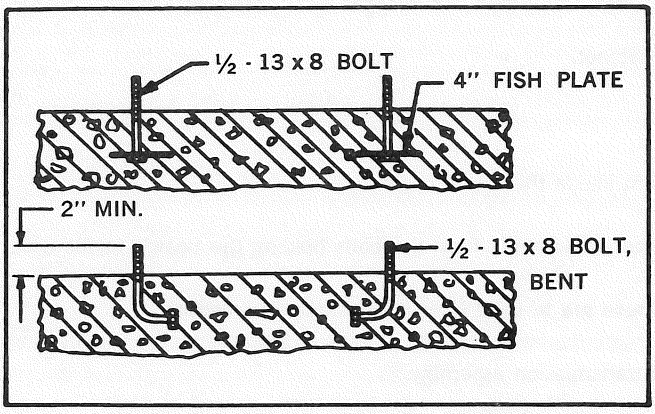


Figure 1-1. Bolts Imbedded in Concrete

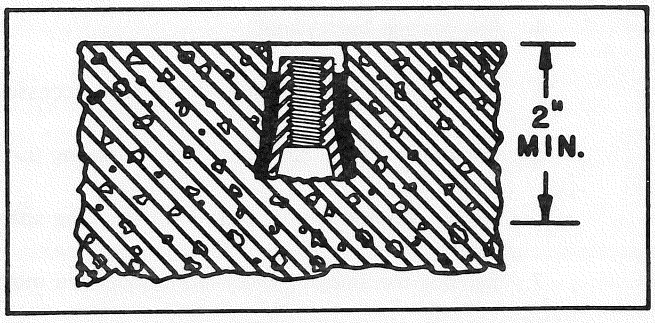


Figure 1-2. Expansion Anchors in Concrete

Ordinarily, the accepted means of installation under such conditions would be to invert two ½X8 inch bolts in the holes cut through the floor, and secure them by pouring pre-mixed Por - Rock or Anchor - Lok around them. This practice has many attractive features in that it often compensates for a floor of somewhat lesser quality than that required by expansion anchors.

Por-Rock or Anchor-Lok can be purchased from hardware stores or lumber yards. It has one great advantage in that it expands instead of contracting when cured. The units should not be completely bolted down until the Por-Rock or Anchor-Lok is completely cured.

Occasionally, toggle bolts can be used where the floor lacks only the required thickness. Several varieties are available in most hardware stores or a satisfactory one can be improvised from a bolt and a piece of angle iron. An elongated slot cut through the floor will facilitate insertion of the angle iron so it can be revolved 90° to a holding position. Once the toggle is properly installed in the floor, new concrete can be molded into the opening to hold the bolt securely in place.

In all concrete work, use 1 part of common cement or super-cement with five parts of grout of 40-60 mix. The old flooring should be removed to a depth of at least six inches. The new flooring can be made level with the original floor or can be elevated to provide easier access to the clothes door. In either case, properly locate and suspend threaded bolts in the wet concrete to fasten the washer.

EQUIPMENT INSTALLATION

UNCRATING

1. Cut the bottom steel strap and unfold the bottom cap of the container from the sleeve.
2. Lift the sleeve and top cap off the washer. (To recrate, reverse the above procedure and restrap the bottom cap.)
3. Remove the corrugated fillers that remain around the cabinet.
4. Remove the back panel.
5. Remove all hoses and other installation accessories from inside the clothes cylinder.
6. Remove the crate base boards by removing the nuts and lockwashers from the bolts holding the boards to the unit.

   NOTE: Do not misplace the four mounting spacers. These are to used later in installation procedure.
7. Remove the shipping block from under the motor and transmission assembly.
8. **Remove the transparent film from the face of the excutcheon. (Protective covering)**

BOLT — DOWN PROCEDURE

The four mounting spacers removed at the same time as the crate base should be installed between the washer and mounting surface so the necessary spacing can be maintained.

1. The recommended method of installation is to use the spacers between the cabinet base and the supporting members (see Figure 1-3).

2. Another method is to bolt the optional leg brackets with eight bolts to the base of the unit, leaving the outboard section of each bracket to extend from under the unit on each side (see Figure 1-4). These extended sections are then bolted to the floor or supporting members. The optional leg brackets are available through your distributor and not furnished with washers.

3. Place the unit in its final installed position aligning the holes in the washer with the respective anchor bolts or anchors.

4. Insert the unit mounting bolts or nuts and lockwashers and tighten securely.

   NOTE: All hold-down bolts should be periodically checked and retightened.

WASHER HOOK - UP AND CHECK - OUT

1. Insert the thick hose washers in one end of each water inlet hose coupling and attach to the threaded connections on the mixing valve.

2. Connect the appropriate hot and cold hoses to the water supply lines using the strainers and hose washers. (Looking at the back of washer — Left side is Hot — Right side is Cold.)

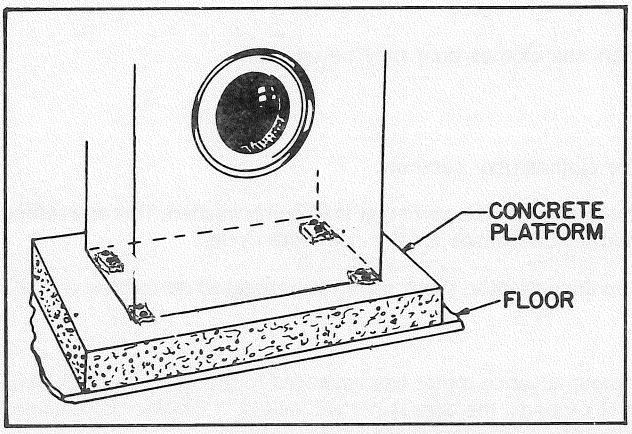


FIGURE 1-3 BOLTING - FURNISHED SPACERS

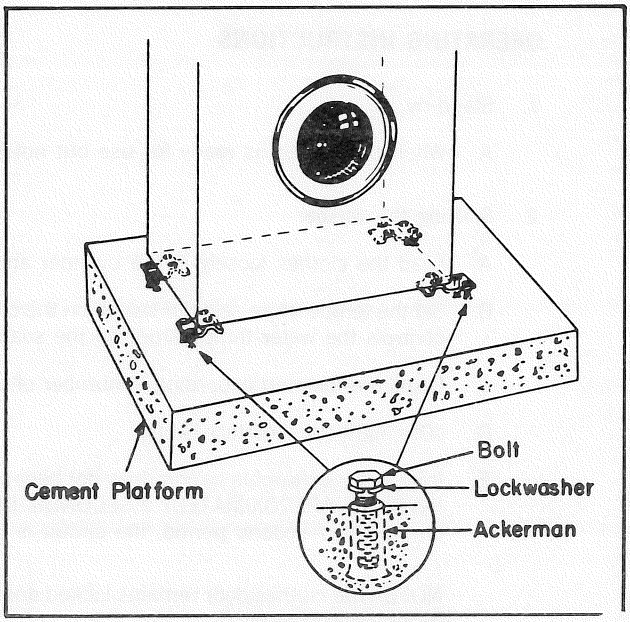


FIGURE 1-4 BOLTING - OPT. LEG BRACKETS

3. Check the transmission oil level. Use only special transmission oil listed in Accessories and Special Tool Group section of this manual.

4. Install the drive belt on the drive and driven pulley.

5. The coin box is taped to the front cradle in the lower service door area. The lock and key for the coin box is furnished with the washer.

6. Insert the three-pronged power cord into the power supply for the unit.

7. To avoid inconvenience and loss of time, all connections and unit operation should be checked before installation is completed. It would be wise to run through a complete cycle with a load of clothes before assuming a successful installation has been made.

8. Install the back panel on the washer.

NOTE: Never leave the back panel off the unit. This panel is a safety shield and it adds rigidity, supports the overflow hose, and protects the washer components from dirt, moisture, lint, etc. The panel will also help reduce the noise level in multiple installation stores.

9. Whenever it is necessary to add an extension to the overflow hose, do not use less than 1½" I.D. extension hose or route the hose upward. This is necessary to maintain efficient excess suds elimination.

OPERATING INSTRUCTIONS

1. Stand-by

   A. When the washer is ready for use but not in operation, the clothes door may be opened.

2. Starting the washer

   A. Load the clothes loosely in the cylinder and latch the clothes door securely.

   B. Set the temperature selector switch on the combination desired for the particular load being washed. This one setting controls the water temperature on the soak, wash and various rinses for the complete cycle.

   C. Coins are inserted according to number of coins set on accumulator. (Start switch is depressed on manual model.)

   D. "ON" light immediately lights.

   E. Inlet water or tumble action does not begin until the rapid advance motor has advanced to the wash position. THIS INVOLVES APPROXIMATELY 7 SECONDS. During this 7 seconds, the door is not yet locked. If the door is reopened during the 7 second period, the circuit is interrupted and will not begin again until closed.

   NOTE: The clothes door remains locked and cannot be opened until the cycle is completed or there is an interruption in the power supply.

SPECIFICATIONS

MODELS

WCA20K — Pump, Coin Meter, Front Coin Box - 115V., 60Hz., 1 Ph.
WCA20KD — Dump, Coin Meter, Front Coin Box - 115V., 60Hz., 1 Ph.
WCA20D21 — Dump, Manual Timer - 230V., 50Hz., 1 Ph., - Dexter Brand
WCA20KD21 — Dump, Coin Meter, Front Coin Box - 230V., 50Hz., 1 Ph., - Dexter Brand
Conversion to Manual Operation — Kit 9732-055-001 (all models)

SUFFIX LETTERS FOR COLOR & VARIATIONS

No Suffix Letter - White HG - Harvest Gold A - Almond

MOTORS:

½ HP, 115V., 60Hz., 1 Ph., 8.6 Amp, Capacitator Start
½ HP, 230V., 50Hz., 1 Ph., 4.0 Amp, Capacitator Start

WATER SUPPLY:

Minimum Flow Pressure - 30 P.S.I.; Maximum 120 P.S.I.

WATER VALVE:

Non-Thermostatic, 2 Solenoid, 6.2 G.P.M. (23.47 Liters) Flow Washer

WATER CONSUMPTION:

Approx.: 56 Gal. Max (210 Liters) - 20 lb. (9 Kilo) Loaded - Including Soak Cycle
Approx.: 42 Gal. Max. (159 Liters) - 20lb. (9 Kilo) Loaded - Excluding Soak Cycle

A guide to hot/cold water usage, assuming equal hot/cold water pressures, would be:

	Full Cycle 20# Load Hot/Cold	Short Cycle 20# Load Hot/Cold
Hot Wash, Warm Rinse	32.5/23.5	28.5/13.5
Hot Wash, Cold Rinse	9.0/47.0	15.0/27.0
Warm Wash, Warm Rinse	28.0/28.0	21.0/21.0
Warm Wash, Cold Rinse	4.5/51.5	7.5/34.5
Cold Wash, Cold Rinse	0/56	0/42.0

CYCLE TIME:

Including Soak - 30 Min. Excluding Soak - 24 Min.

WATER TEMPERATURE:

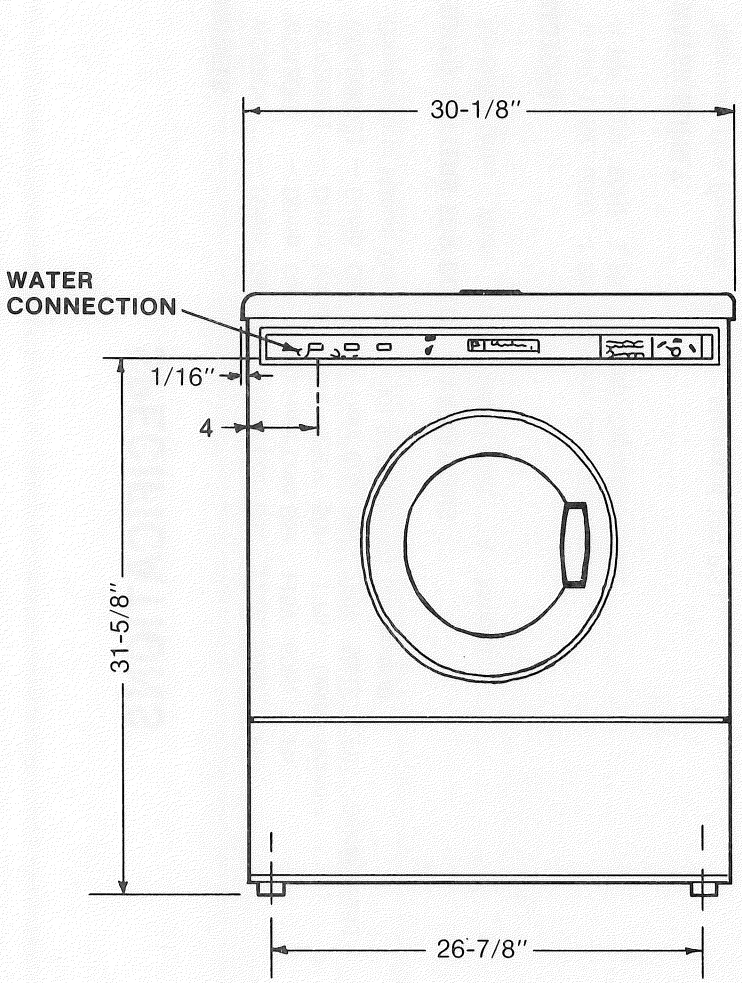
REGULAR CYCLE

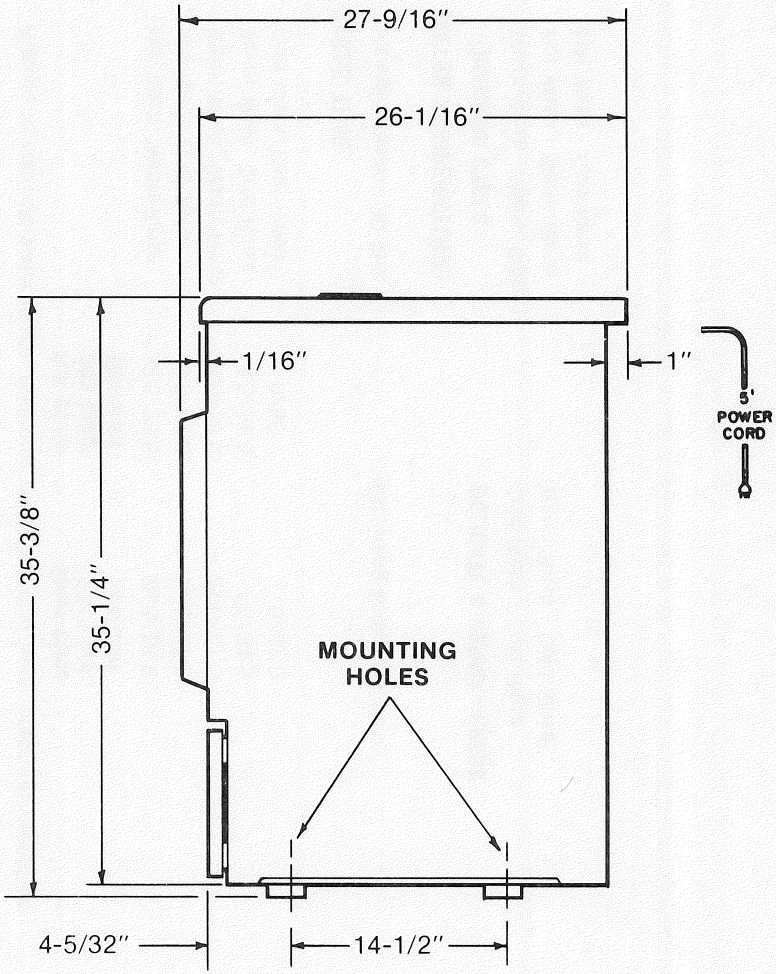
Warm Wash - Warm Rinse
Hot Wash - Warm Rinse
Hot Wash - Cold Rinse

DELICATE & PERMA—PRESS

Cold Wash - Cold Rinse
Warm Wash - Cold Rinse

Specifications subject to change without notice.





MOUNTING DIMENSIONS

Section 2

SEQUENCE CHARTS AND WIRING DIAGRAMS

THE TIMER SEQUENCE CHART

The timer sequence charts are used in conjunction with the wiring diagrams to trace the circuitry during the timer cycle.

The timer contacts and the operation or component that each contact controls are listed across the top of the chart.

The phases of the complete cycle are shown down the left-hand side of the chart.

The timer switch steps, or increments, are numbered down in the right-hand side of the chart.

The solid vertical bars in the chart denote when the various contacts are closed during the cycle.

To use the sequence chart to trace the circuitry:

1. Locate the particular phase or step of the cycle on the sequence chart.
2. Determine which timer contacts are closed during that particular step of the cycle by noting the solid vertical bars in that step across the chart.
3. Fill in the gap of the respective contacts on the wiring diagram with a soft dark pencil, to thus illustrate the contacts as being closed.
4. Similarly, determine which switch contacts are closed, by the switch chart, and illustrate them as closed on the wiring diagram.
5. The circuitry during the particular step of the cycle may then be easily traced on the wiring diagram, since all contacts and switches are then properly illustrated as being open or closed.

TIMER SWITCH SEQUENCE CHART

DIVISIONS ARE EQUAL TO 5° OF TIMER ROTATION, OR APPROX. 25¼ SECONDS RUNNING TIME.

CONTACT POSITIONS	1T	1B	2T	2B	3T	3B	4T	4B	5T	5B	6T	6B	7B	8T	8B	9T	10T	10B	11B
	RINSE TEMPERATURE	WASH TEMPERATURE	START – LONG CYCLE	ON LIGHT – RUN LONG CYCLE	WASH WATER	RINSE WATER	RAPID ADVANCE	RINSE LIGHT	HIGH SPIN	DUMP VALVE	LOW SPIN	ASSURED RINSE	DRAIN PUMP	START – SHORT CYCLE	RUN – SHORT CYCLE	ASSURED START	ON – OFF TRANSFER	WASH LIGHT	ON – LIGHT TRANSFER
TUMBLE SOAK WARM OR COLD WATER																			
TUMBLE DRAIN																			
SPRAY RINSE																			
TUMBLE DRAIN																			
WASH HOT, WARM, OR COLD WATER																			
TUMBLE DRAIN																			
SPRAY RINSE																			
TUMBLE DRAIN																			
SPIN – LOW																			
TUMBLE RINSE																			
TUMBLE DRAIN																			
SPIN – LOW																			
FINAL RINSE																			
TUMBLE DRAIN																			
SPIN – LOW																			
SPIN – HIGH																			
TUMBLE OFF START																			

-40 -80 -120 -160 -200 -240 -280 -320 -360

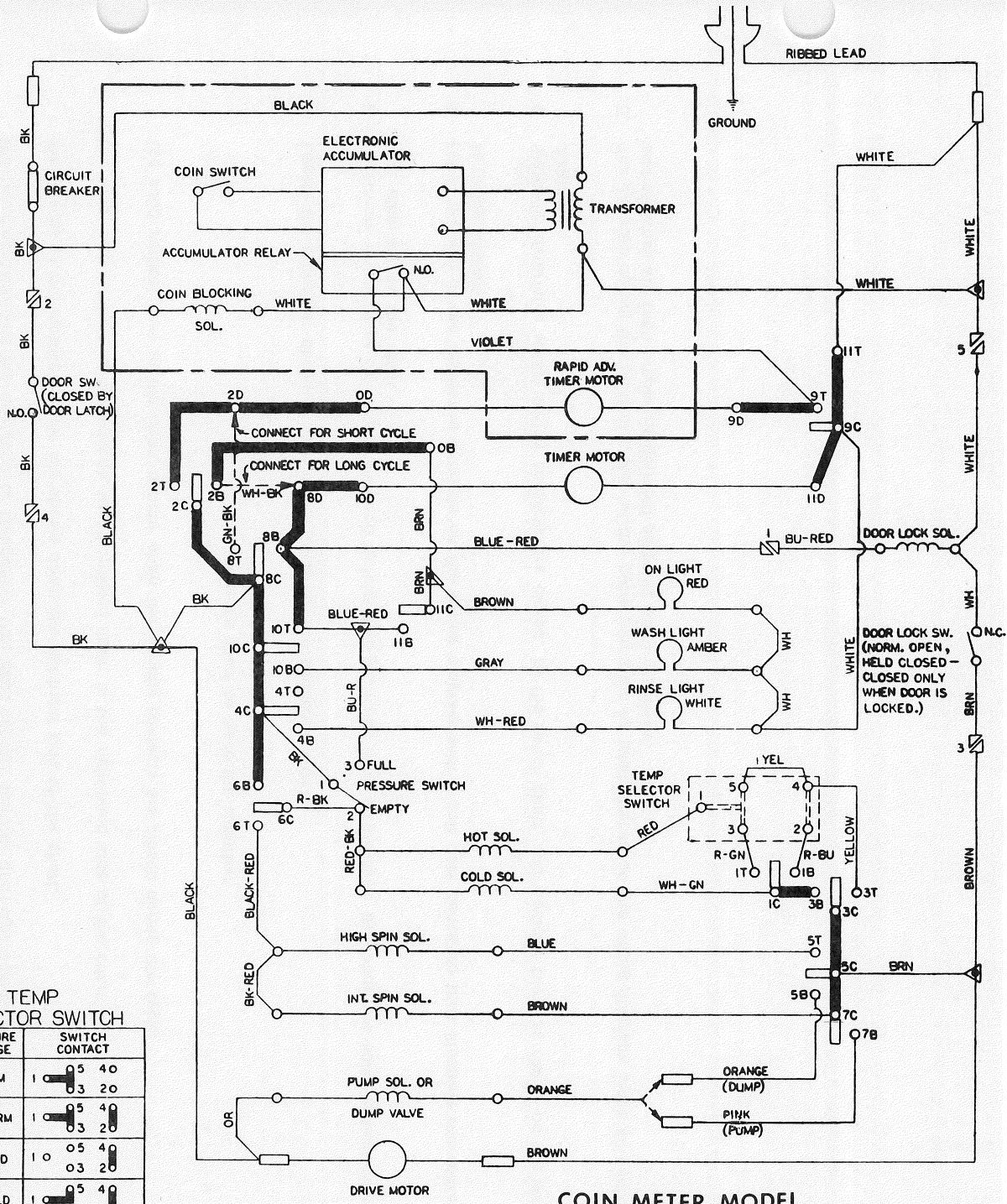
■ CONTACTS CLOSED

LEGEND

- CONNECTOR – WIRE TO WIRE
- WIRING
- INTERNAL BUSS BAR OF TIMER.
- TIMER SWITCH CONTACTS ILLUSTRATED ARE CAM 3 BOTTOM (3B), CAM 3 TOP (3T), AND CAM 3 COMMON (3C).
- TERMINALS
- SWITCH
- WIRING SPLICE
- MULTI – POLE CONNECTOR

TEMP SELECTOR SWITCH

TEMPERATURE WASH-RINSE	SWITCH CONTACT
HOT – WARM	1 – 5 4 – 3 2
WARM – WARM	1 – 5 4 – 3 2
COLD – COLD	1 – 5 4 – 3 2
WARM – COLD	1 – 5 4 – 3 2
HOT – COLD	1 – 5 4 – 3 2



COIN METER MODEL

WITH COIN BLOCKING WCA20 SERIES WASHERS

TIMER SWITCH SEQUENCE CHART

DIVISIONS ARE EQUAL TO 5° OF TIMER ROTATION, OR APPROX. 25⅛ SECONDS RUNNING TIME.

CONTACT POSITIONS	1T	1B	2T	2B	3T	3B	4T	4B	5T	5B	6T	6B	7B	8T	8B	9T	10T	10B	11B
	RINSE TEMPERATURE	WASH TEMPERATURE	START-LONG CYCLE	ON LIGHT-RUN LONG CYCLE	WASH WATER	RINSE WATER	RAPID ADVANCE	RINSE LIGHT	HIGH SPIN	DUMP VALVE	LOW SPIN	ASSURED RINSE	DRAIN PUMP	START-SHORT CYCLE	RUN-SHORT CYCLE	ASSURED START	ON-OFF TRANSFER	WASH LIGHT	ON-LIGHT TRANSFER
TUMBLE SOAK WARM OR COLD WATER	■																		
TUMBLE DRAIN																			
SPRAY RINSE																			
TUMBLE DRAIN																			
WASH HOT, WARM, OR COLD WATER	■		■		■		■					■		■					
TUMBLE DRAIN																			
SPRAY RINSE							■												
TUMBLE DRAIN																			
SPIN-LOW																			
TUMBLE RINSE							■	■					■						
TUMBLE DRAIN																			
SPIN-LOW																			
FINAL RINSE							■	■	■										
TUMBLE DRAIN																			
SPIN-LOW																			
SPIN-HIGH										■									■
TUMBLE OFF START			■																

■ CONTACTS CLOSED

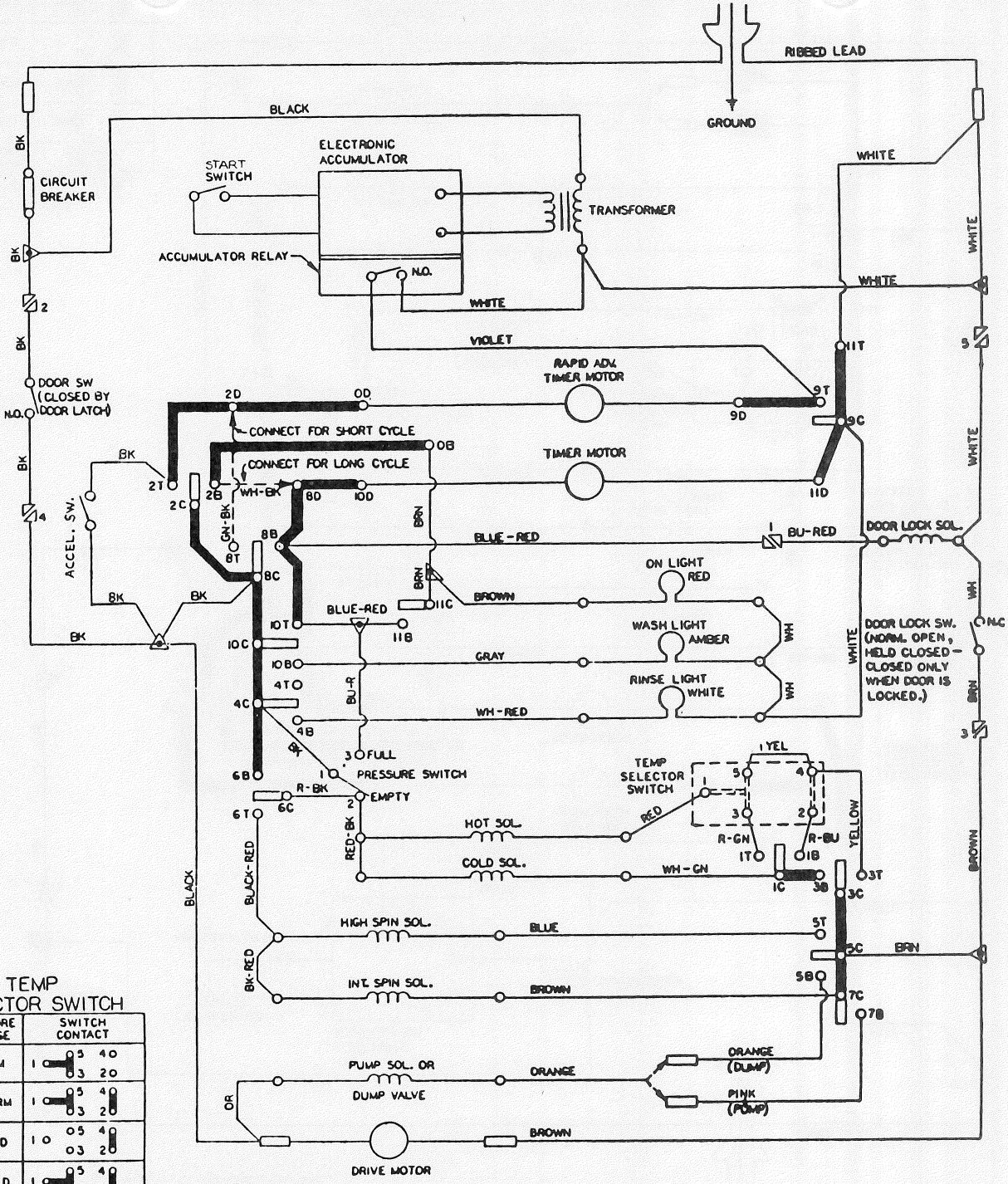
-40 -80 -120 -160 -200 -240 -280 -320 -360

LEGEND

- CONNECTOR-WIRE TO WIRE
- WIRING
- INTERNAL BUSS BAR OF TIMER.
- TERMINALS
- SWITCH
- WIRING SPLICE
- MULTI-POLE CONNECTOR
- TIMER SWITCH CONTACTS ILLUSTRATED ARE CAM 3 BOTTOM (3B), CAM 3 TOP (3T), AND CAM 3 COMMON (3C).

TEMP SELECTOR SWITCH

TEMPERATURE WASH-RINSE	SWITCH CONTACT
HOT-WARM	1 5 4 3 2
WARM-WARM	1 5 4 3 2
COLD-COLD	1 5 4 3 2
WARM-COLD	1 5 4 3 2
HOT-COLD	1 5 4 3 2



MANUAL MODEL ONLY

SCHEMATIC DIAGRAM
WCA20 SERIES WASHER
110-120 VOLT, 1 PHASE, 60 HZ.

TIMER SWITCH SEQUENCE CHART

DIVISIONS ARE EQUAL TO 5° OF TIMER ROTATION, OR APPROX. 25¼ SECONDS RUNNING TIME.

CONTACT POSITIONS	1T	1B	2T	2B	3T	3B	4T	4B	5T	5B	6T	6B	7B	8T	8B	9T	10T	10B	11B
	RINSE TEMPERATURE	WASH TEMPERATURE	START-LONG CYCLE	ON LIGHT-RUN LONG CYCLE	WASH WATER	RINSE WATER	RAPID ADVANCE	RINSE LIGHT	HIGH SPIN	DUMP VALVE	LOW SPIN	ASSURED RINSE	DRAIN PUMP	START-SHORT CYCLE	RUN-SHORT CYCLE	ASSURED START	ON-OFF TRANSFER	WASH LIGHT	ON-LIGHT TRANSFER
TUMBLE SOAK WARM OR COLD WATER	■			■		■				■				■		■			
TUMBLE DRAIN													■						
SPRAY RINSE	■					■						■							
TUMBLE DRAIN													■						
WASH HOT, WARM, OR COLD WATER		■		■	■		■			■					■			■	
TUMBLE DRAIN													■						
SPRAY RINSE	■					■						■							
TUMBLE DRAIN													■						
SPIN - LOW			■																
TUMBLE RINSE	■					■				■					■				
TUMBLE DRAIN													■						
SPIN - LOW			■																
FINAL RINSE	■					■		■		■					■				
TUMBLE DRAIN													■						
SPIN - LOW			■																
SPIN - HIGH									■		■								■
TUMBLE OFF START	■		■											■		■			

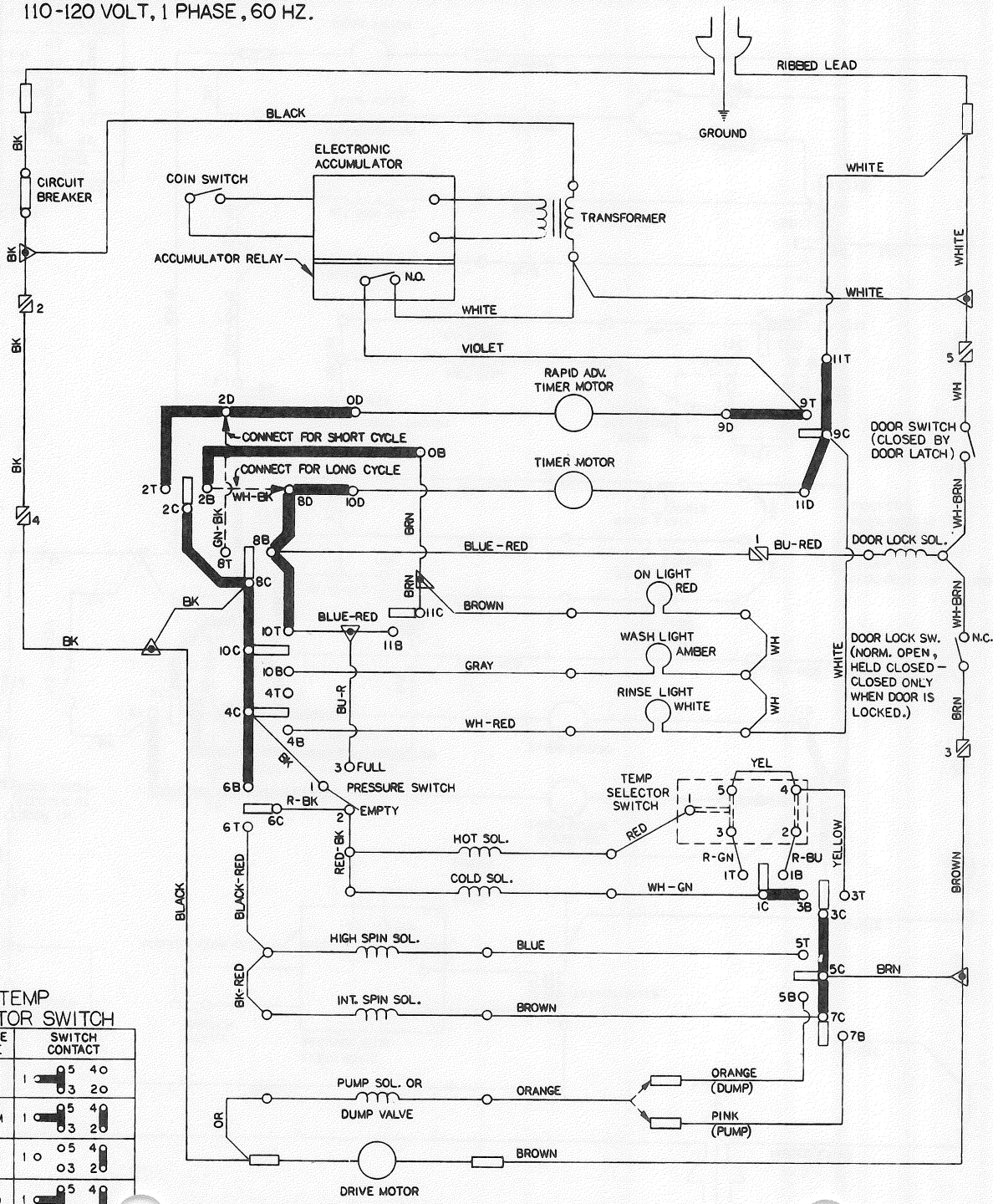
■ CONTACTS CLOSED

LEGEND

- CONNECTOR - WIRE TO WIRE
- WIRING
- INTERNAL BUSS BAR OF TIMER.
- TIMER SWITCH CONTACTS ILLUSTRATED ARE CAM 3 BOTTOM (3B), CAM 3 TOP (3T), AND COMMON (3C).
- TERMINALS
- SWITCH
- WIRING SPLICE
- MULTI-POLE CONNECTOR

TEMP SELECTOR SWITCH

TEMPERATURE WASH-RINSE	SWITCH CONTACT
HOT-WARM	1 ● 5 4 ● 3 2 ●
WARM-WARM	1 ● 5 4 ● 3 2 ●
COLD-COLD	1 ● 5 4 ● 3 2 ●
WARM-COLD	1 ● 5 4 ● 3 2 ●
HOT-COLD	1 ● 5 4 ● 3 2 ●



WITHOUT COIN BLOCKING

Section 3

SERVICE PROCEDURES

REMOVAL OF TOP PANEL

A. Remove the lock holding the top panel to the front panel.

B. Lift up from the front and move the top panel to the rear until it is clear of the hold down brackets in the rear. (The grounding wire can easily be unplugged from the terminal on the back channel).

NOTE: Do not misplace the two gaskets assembled to the top panel flanges, one on each side. When the top panel is reassembled, use a liquid soap lubricant on the under side of the panel, where the soap diaphragm contacts and seals. This will assure a water tight seal.

REMOVAL OF SOAP DOOR FROM TOP PANEL

A. Remove the two screws and nuts holding the soap door assembly to the top panel.

NOTE: Do not misplace two nylon and two fiber washers. These should be used in re-assembly.

REMOVAL OF BACK PANEL

A. Remove the screws holding the back panel in place and remove the panel.

NOTE: This panel should never be removed except for servicing purposes. It adds rigidity to the unit and minimizes vibration.

REMOVAL OF SIDE PANELS

A. Remove the top and back panels.

B. Remove the two screws along the bottom of the side panel securing it to the base.

C. Remove the three screws holding the upper back channel to the side panel.

D. Remove the screw holding the top of the side panel to the top of the front panel.

E. Spread the back of the side panel away from the unit.

F. Remove the three screws along the inside front of the side panel which holds the side panel to the front panel.

REMOVAL OF FRONT PANEL ASSEMBLY (Refer to Figures 4-1 and 4-2)

1. Remove the top, back, and side panels.

2. Remove or disconnect all wiring necessary to remove front panel assembly.

3. Open the clothes door and remove the six screws and fiber washers holding the front panel to the sealing ring.

NOTE: When reassembling the six screws, do not overtighten.

DISASSEMBLY OF FRONT PANEL ASSEMBLY

The front panel assembly consists of several serviceable components. Complete disassembly procedure is as follows:

1. **CLOTHES DOOR**

The clothes door is made up of various serviceable components. (See Figure 4-3 for exploded view). To remove the clothes door assembly from the front panel, remove the three hex head screws securing the door to the hinge leaf.

NOTE: Do not lose the spacer between the hinge and the door liner.

2. **CLOTHES DOOR ADJUSTMENT**

A. Loosen the three hex head screws until the clothes door is barely supporting itself on the hinge.

B. Slowly close the door until the latch starts to enter the latch opening in the cabinet — the latch should be centered in the latch opening. When centered, open the door.

C. Tighten the center screw and close the door. Examine the position of the clothes door in the cabinet clothes port. After it is properly adjusted, open the door and tighten all screws securely.

3. **DOOR RING, HANDLE AND LATCH**

The door ring, handle and latch are secured to the clothes door panel and window assembly by six screws and can be serviced without removing the clothes door assembly from the front panel assembly.

A. Remove the six screws securing the ring assembly and insert to the window and panel assembly.

B. Place the ring on a scratch free surface and remove the two screws securing the pin and latch (See "A" in Figure 3 - 1.)

C. Lift the Pin and latch from the grooves in the outer ring. Note position of the latch lever and spring.

4. **DISASSEMBLY OF CLOTHES DOOR**

A. Place the clothes door assembly face down on a scratch free surface.

B. Remove the six outer Phillips head screws from the door panel.

C. Lift the panel and window assembly out of the ring.

D. Removing the remaining six screws on the inner circumference of the clothes door panel will permit the accessibility to the rest of the serviceable component parts.

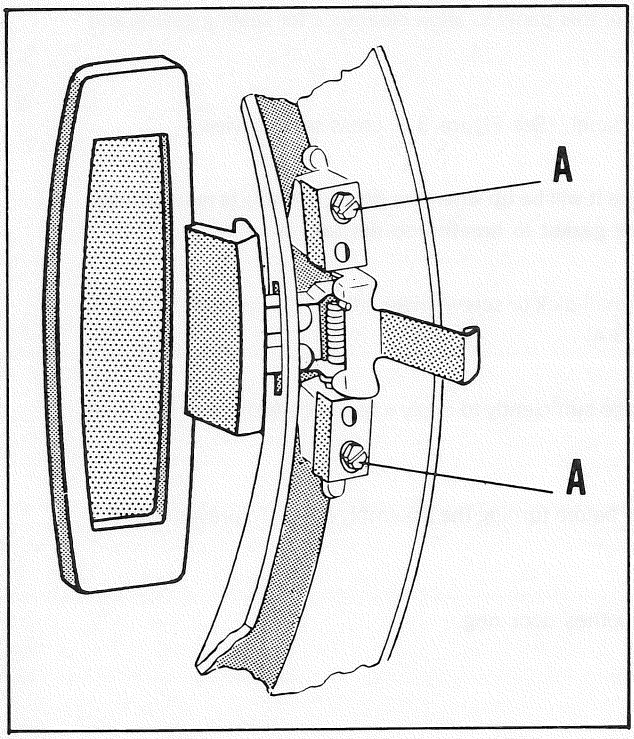


Figure 3 - 1. Latch Mechanism

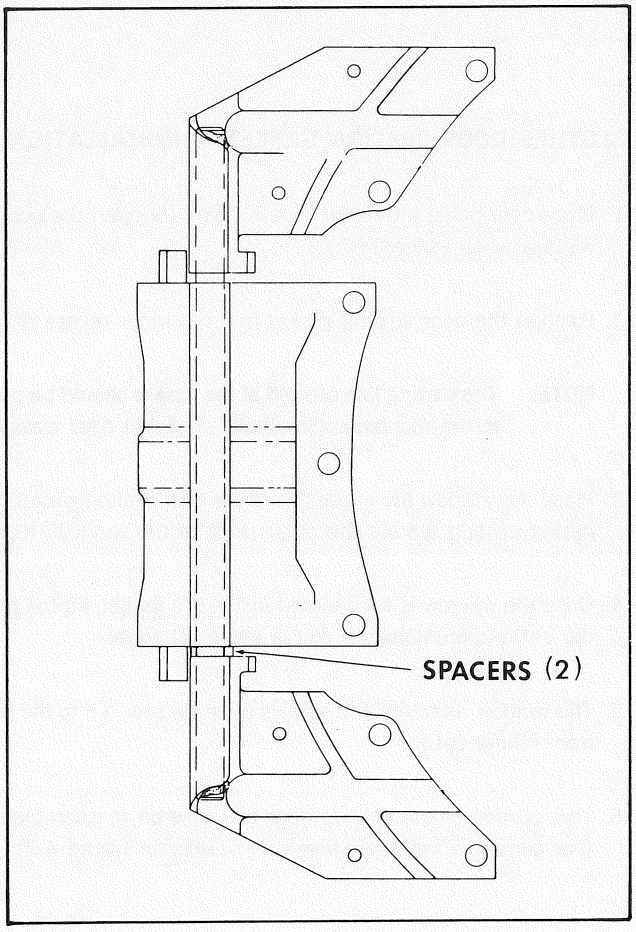


Figure 3 - 2. Hinge Assembly

REMOVAL OF CLOTHES DOOR SEALING GASKET

1. To remove the clothes door assembly from the front panel, remove the three hex head screws securing the door assembly to the hinge.
2. Place the clothes door assembly face down on a scratch free surface.
3. Remove the six outer Phillips head screws from the door panel.
4. Lift the panel and window assembly out of the ring.
5. Removal of the remaining screws and retainer on the inner circumference will permit the removal of the window from the gasket, and the gasket from the door panel.

CLOTHES DOOR SEALING GASKET — INSTALLATION

1. Place door panel with inner recess down. (Support the outer portion of this panel to allow clearance for sealing gasket and window when assembled.)
2. Position the door sealing gasket into the inner recess of the door panel. (See Figure 3-3, cross-section view.)

   NOTE: The parting line or weld of the gasket should be positioned so it will be up when the door assembly is reassembled to the machine. (Small slit in gasket near weld is to allow gasket to breath and not take a set.)

3. Place the window (door glass) into the door sealing gasket. Using a small pick or screw driver, lift the rubber channel of the gasket up and around the outer ridge of the window. (See Figure 3-4)
4. Once the window is fully seated inside the gasket, lift the rubber flange sufficiently to apply a bead of silastic sealer around the entire circumference of the gasket channel.
5. The window retainers and screws must be secured to the door panel before turning the assembly over. (To prevent window from falling out.)
6. This portion of the clothes door can now be reassembled to the clothes door ring.
   (For complete assembly breakdown, refer to Figure 4-3)

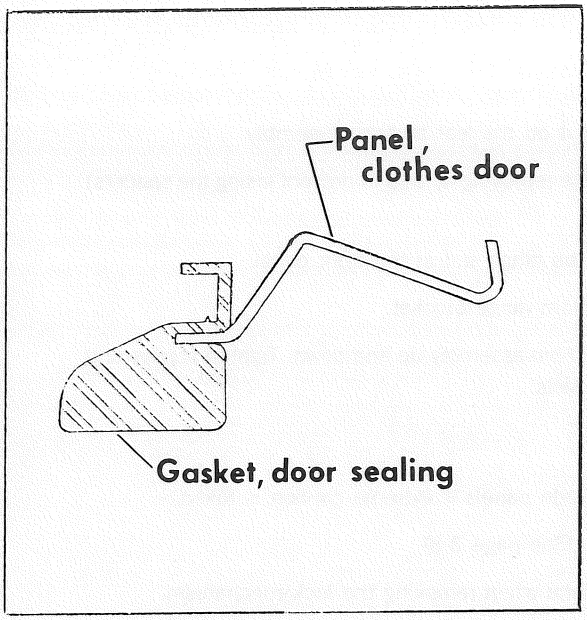


FIGURE 3-3

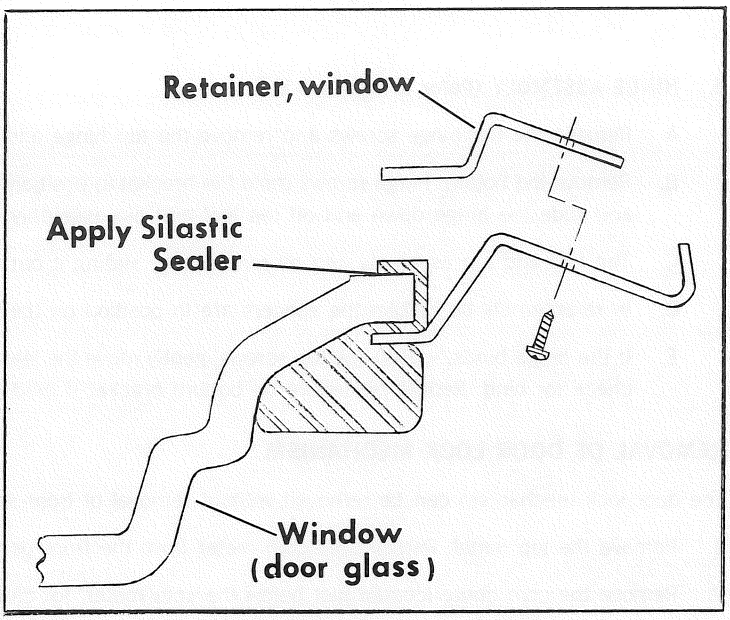


FIGURE 3-4

REMOVAL OF SEALING RING AND COLLAR (Refer to Figure 4-2)

1. Remove front panel.
2. The sealing ring can now be removed by loosening the clamp which fastens the rubber collar to the plastic sealing ring.
3. The rubber collar can be removed by loosening the clamp which secures the collar to the tub flange.

COLLAR AND SEALING RING — INSTALLATION (Refer to Figure 4-2)

1. Place the rubber collar onto the tub flange making certain the parting line, or weld is at the highest position.
2. Assemble the clamp which secures the collar to the tub flange. (Note tightening screw position — approx. 7 o'clock position.)
3. Assemble the clamp and sealing ring to the collar. THE SEALING RING WILL ONLY GO ON IN ONE POSITION. The notched-out area goes toward the door lock.
4. Using a level, align the upper and lower screw holes as near perpendicular as possible. This will align the screw holes in the front panel when reassembled. Tighten clamp. (Tightening screw position should be up.)

5. **HINGE ASSEMBLY (Refer to Figure 3-2)**

   A. Remove the top hinge screws and remove the top hinge and lift it off the leaf and pin assembly.

   B. Remove the bottom hinge screws (hold the bracket in position while removing screws to prevent losing the spacers) and slide the hinge down and off the leaf and pin assembly.

   C. The leaf and pin assembly can be removed by sliding it out of the hinge slot in the front panel.

   D. In re-assembly be certain the spacers are in position on the bottom hinge bracket.

   E. If the hinge binds, loosen the top screws, gently move the leaf and pin assembly up and down. Tighten screws and check for bind. Repeat procedure on bottom bracket if bind persists.

REMOVAL OF DOOR LOCK MECHANISM

The door lock mechanism can be removed without removal of front and side panels if extreme caution is taken.

1. Remove the top panel. Remove the coin meter from the front panel. (See page 3-8)
2. Remove the coin chute located just below the coin meter, for clearance when removing the lock mechanism.
3. Reach down inside the front panel and hold the lock assembly, while removing the two screws which secure the lock to the front panel.
4. Lift the lock mechanism up and out the top opening. Note the wiring connector in the harness for quick separation of the lock mechanism from the main wiring harness.

REMOVAL OF ESCUTCHEON

A. Loosen the allen set screw and remove the time knob (non-metered models only.)

B. Remove the water temperature knob.

C. Remove the escutcheon attaching screws (6).

REMOVAL OF INDICATOR LIGHTS AND WATER TEMPERATURE SWITCH

A. Remove the escutcheon.

B. Remove the top panel.

C. The switch and indicator lights are available for simple removal.

INTERVAL TIME

An interval timer is incorporated which will coordinate the electrically controlled assemblies of the washer, causing them to perform their various functions at the proper time during the cycle.

The timer assembly include two drive motors. Looking at the shaft side of the timer, the left motor is the main drive motor and the right motor is the rapid advance motor.

The main timer motor drives a gear train which in turn rotates the cam-stack assembly at a constant speed. (One revolution in approximately 30 minutes - long cycle option.)

The rapid advance motor is wired into the circuitry of the washer, to advance the timer through the pre-soak period, into the wash portion of the cycle as assembled at the factory. (To include the pre-soak in the cycle, see page 3-9 of this service manual.)

NOTE: THE WASHER STARTING SEQUENCE IS AS FOLLOW —

A. **COINS ARE INSERTED ACCORDING TO NUMBER OF COINS SET ON ACCUMULATOR. (START SWITCH DEPRESSED ON MANUAL UNIT.)**

B. **"ON" LIGHT IMMEDIATELY LIGHTS.**

C. **INLET WATER OR TUMBLING ACTION *DOES NOT* BEGIN UNTIL THE RAPID ADVANCE MOTOR HAS ADVANCED TO THE WASH POSITION. *THIS INVOLVES APPROXIMATELY 7 SECONDS.* DURING THIS 7 SECONDS, THE DOOR IS NOT YET LOCKED. IF THE DOOR IS REOPENED DURING THE 7 SECOND PERIOD, THE CIRCUIT IS INTERRUPTED AND WILL NOT BEGIN AGAIN UNTIL CLOSED.**

ON MANUAL WASHERS (UNITS CONVERTED FROM COIN OPERATED TO PUSH TO START MANUAL OPERATION) THERE IS AN ACCELERATION SWITCH (YELLOW BUTTON) PROVIDED TO OFFER RAPID ADVANCING OF THE TIME THROUGH THE CYCLE POSITIONS, AT THE OPERATOR'S OPTION.

CONSTANT DEPRESSION OF THE ACCELERATION SWITCH WILL ADVANCE THE TIMER THROUGH THE COMPLETE CYCLE, EXCEPT FOR APPROXIMATELY ONE MINUTE OF FINAL SPIN TO ASSURE REMOVAL OF EXCESS WATER IN THE TUB.

Electrical connections to the timer are made with two multiple-wire connectors which plug into the timer terminals. As mounted in the washer, the top connector is BLACK and the bottom connector is WHITE. Each connector is keyed so it cannot be inverted or exchanged with the other. Immediately below the BLACK connector area of the timer are terminals which accept the wires for short cycle or long cycle connections. (See page 3-9 of this service manual for cycle change instructions.)

REMOVAL OF THE TIMER

Although timer removal is possible without disturbing the timer support bracket, it is usually easier to remove the timer and bracket as an assembly.

1. Disconnect power to the machine.
2. Remove the top panel.
3. Remove the dipstick tube from its mounting hole in the timer support bracket.
4. Remove the two screws mounting the timer bracket to the back channel.
5. Remove the two screws holding the timer to the timer bracket.
6. Unplug both multiple-wire connectors from the timer by depressing the locking tabs and pulling the connectors free.
7. Unplug the GREEN—BLACK and WHITE—BLACK wires from the exposed timer terminals adjacent to the BLACK connector. (When replacing these wires refer to page 3-9.)

REMOVAL OF COIN ACCEPTOR (METER)

The coin acceptor is secured to the recessed opening in the front panel by four TORX DRIVE screws and elastic stop nuts. This is done to limit access to the meter device without a special tool. The TORX DRIVE screws are #4-40 thread and the drive head is a T-9 size. This tool can either be purchased locally or through the Dexter Distributor under Part Number 8545-051-001.

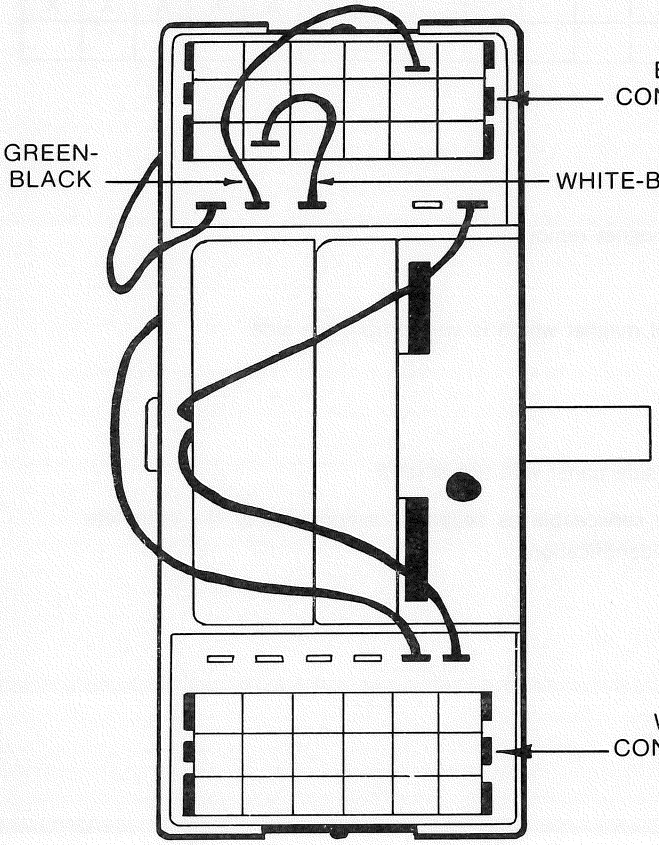
The two screws on the left side of the meter must be removed. The two screws on the right need only to be loosened for the meter to slide free.

SOAK ELIMINATION

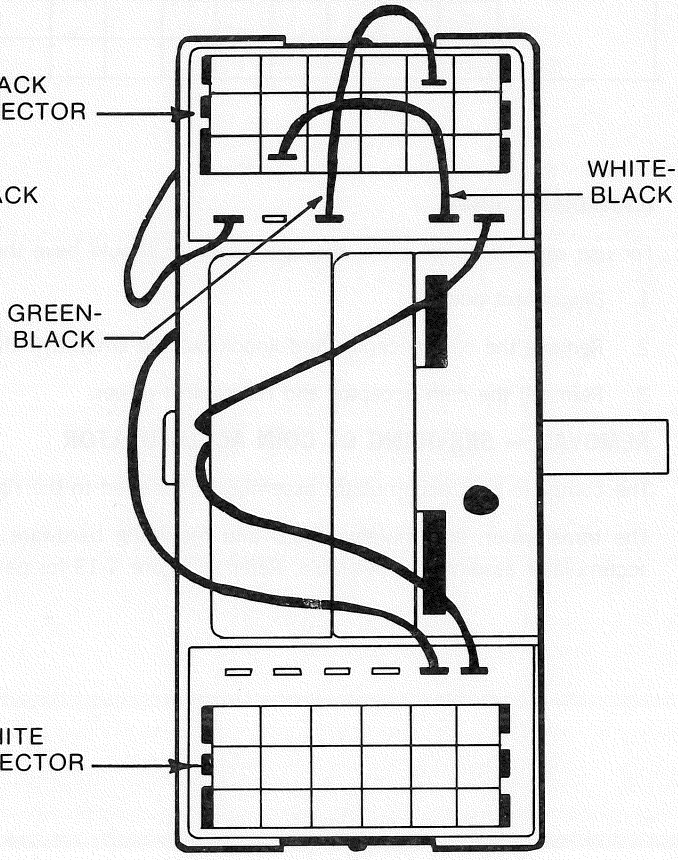
As received from the factory the presoak ahead of the wash has been eliminated to shorten the cycle and conserve water. If the long cycle (which includes the presoak) is desired, use the following steps to convert.

1. Disconnect power to the machine.
2. Remove the top panel and remove the oil dipstick tubing from its mounting in the timer bracket.
3. Remove the two screws mounting the timer bracket to the back channel and orient the timer and bracket assembly for access to the side with the black harness connector.
4. Find the 4 individual wire terminals located just below the black connector.
5. Locate the white-black wire and using needle-nose pliers or some other suitable tool remove that terminal and place it on the previously empty terminal to the side of it.
6. Next, locate the green-black wire and place it on the new empty terminal directly beside it.
7. If there is any question, the two illustrations below show the short and long cycle wiring.
8. Now reattach the timer to the back channel and reinsert the oil tube in the bracket.
9. Replace the top and reconnect power.

SHORT CYCLE



LONG CYCLE



TIMER WIRING

SETTING THE ACCUMULATOR

1. Always disconnect electrical power to the machine before adjusting the accumulator.
2. Remove the washer top panel and locate the accumulator circuit board at the top of the right side as you face the machine.
3. The adjustment is made by setting the 6 small numbered switches in the correct combination. The switches are actuated by pushing through the flexible cover on the numbered side of the switch operator. Do not use a sharp object or the cover will be punctured. To deactivate the switch, push the unnumbered side. The switch combinations for 1 to 20 coin are shown below.
4. Replace the top panel and reconnect power.

NUMBER OF COINS

		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
SWITCH NO.	1	X		X		X		X		X		X		X		X		X		X	
	2		X	X			X	X			X	X			X	X			X	X	
	3				X	X	X	X					X	X	X	X					X
	4								X	X	X	X	X	X	X	X					
	5																X	X	X	X	X
	6																				

(CANADIAN COINS)

For use with Canadian coins, the coin acceptor should have the magnet removed.

1. Disconnect power.
2. Remove the coin acceptor and knock out the small cylindrical magnet which is visible from the side.
3. Reinstall the coin acceptor and reestablish power.

REMOVAL — SERVICING OF COIN ACCUMULATOR

The complete coin accumulator assembly is fastened to the right side panel with two screws.

The transformer, accumulator board and mounting hardware are serviceable as separate components or the complete accumulator assembly is available. Refer to Figure 4-13 for parts identification.

REMOVAL OF SERVICE DOOR

The service door is retained in the closed position by a quarter turn stud which can easily be turned with a dime or screwdriver.

A. Remove the two screws holding each hinge to the base of the washer.

1. Removal of Service Door Latch.
   a. With door open, pry the inside plastic retainer from the stud. (The stud is held captive by the two plastic retainers.)
   b. The latch receptacle can be slid on or off the bracket as needed.
2. Replacement
   a. Insert receptacle onto the bracket with thw "S" shaped wire facing the inside of the machine.
   b. Assemble the stud and plastic retainers. (One on each side of the service panel.)
   c. Close door and turn stud ¼ turn to fasten door in place.

REMOVAL OF CIRCUIT BREAKER

The circuit breaker is located on the upper right hand side of the front cradle, just behind the coin chute. It is fastened in place by a nut on the front side of the cradle. The circuit breaker protects the drive motor on excessive overloads of the circuit. After clearing the overload, it is manually reset by pressing the red plunger.

PRESSURE SWITCH

The pressure switch is used to control the proper water level during the normal cycle of the unit. The action of this switch in the electrical circuit, is also designed to prevent the unit from going into the extraction spin until the majority of the water has been removed from the tub. The functioning of the pressure switch water control system is as follows: As the unit fills with water, an air pocket is formed in the pressure switch hose assembly. The rising water in the tub increases the air pressure in the hose until it is sufficient to force the switch diaphragm to trip the switch contacts, opening the inlet valve solenoid circuit(s). When the machine is drained, the air pressure is gradually decreased and removed, and the diaphragm resets the switch contacts.

It should be noted that this pressure switch system is designed so that fluctuating air pressure caused by tub water movement will not cause erratic action of the switch contacts. However, if water should get into the small hose, due to laying the machine on its back, or if the hose becomes kinked, erratic pressure switch operation may result. (See Water Level Adjustment.)

REMOVAL

A. Remove the top panel.

B. Check the switch for circuit continuity or with a jumper wire to make sure a fault exists.

C. Disconnect the power cord and remove the wires from the switch.

D. Remove the screws securing the switch in position.

E. Disconnect the pressure switch hose at the switch nipple.

INSTALLATION HINTS

A. Before connecting the switch hose, blow through it to clear of water.

B. If the pressure switch hose fits too loosely on the switch nipple, cut off about ½" to assure an air-tight fit.

C. Connect power supply and check water level with the washer operating.

WATER LEVEL ADJUSTMENT

1. Before making any adjustments on the pressure switch, drain the tub and blow the hose clear of possible water bubbles which can cause erratic pressure switch operation, then follow the installation hints as outlined above.

2. On all adjustments, it will be necessary to completely drain the unit, then refill for water level check.

3. Note the hex-head screw in the center of the switch body.

4. Clockwise rotation of the screw will raise the water level and counterclockwise rotation will lower the water level. Both the break and the reset adjustments are made with this screw adjustment.

5. ⅛ of a turn on this screw will vary the water level approximately ¼".

WATER LEVEL CHECK

1. Turn on the washer and allow the washer to fill.

2. Turn off the washer after the pressure switch trips from "empty" to "full".

3. Open the clothes door and insert a length of wire at midpoint across the cylinder and measure from the top of the water to the base of the drain housing. **(Should measure 8¾" to 9¾".)**

4. Measure the above with the cylinder baffles 45° from vertical centerline.

NOTE: On dump valve models, the valve must be blocked shut before power is disconnected, otherwise the valve will open and drain the tub.

TWO - SOLENOID NON - THERMOSTATIC INLET VALVE

The two-solenoid non-thermostatic inlet and mixing valve allows three different water temperatures to be selected:

hot, warm, and cold.

The solenoids are electro-magnets that when energized pulls back a plunger which releases a rubber seat allowing water to flow. When the solenoid is de-energized, a spring acts in the opposite direction to push the plunger back against the seat.

HOT OR COLD: When either of these is selected, only the hot or cold solenoid is energized.

WARM: Both the hot and cold solenoids are energized, to allow both hot and cold water to flow and mix together. The flow control washer meters the amount of water entering the tub (6.2 G.P.M.).

This inlet valve is completely serviceable in that the solenoid coils, guides, springs, plungers, diaphragms, flow control washer, and screens can all be replaced quite readily. (See Figure 4-6 for breakdown.)

WATER INLET TROUGH

This water inlet system from the outlet of the mixing valve to the washer consists of a combination spray and inlet trough and connecting hoses. The inlet trough incorporates an air gap to meet plumbing codes.

REMOVAL

1. Remove top panel.
2. Relax and slide corbin clamps (one on each end) until they are free of the inlet trough.
3. Remove the two screws holding the inlet trough to the bracket.

OVERFLOW HOSE (Pump Models Only)

The overflow hose is located at approximately the 11 o'clock position in the tub and extends out through the back panel. The hose provides for overflow water removal from the washer. Also it is the means for excess suds removal resulting from over-sudsing by the user. (Ref. Fig.4-8)

(Note: This tub outlet is blocked off with a plug on all Dump Models.)

REMOVAL

1. Remove the back panel.
2. Remove the grommeted end of the hose from the tub.

NOTE: Upon reassembly, be sure to properly install the hose grommet in the tub opening, using a sealer so that no water leaks will occur. Do not allow the hose to become kinked.

OVERFLOW HOSE (Dump Models Only)

The overflow hose is located at approximately the 3 o'clock position in the tub back assembly and extends directly to the dump valve drain. (Ref. Fig. 4-8)

(Note: This hole in the tub back is plugged on all Pump Models)

DRAIN SCREEN ASSEMBLY (Pump Models)

The drain screen assembly is removed by lifting up on the snap lever on the front and lifting up the bail wire. In the event of a leak at this point, the rear of the drain screen housing should be examined for foreign material which may prevent the gasket from setting properly by holding the screen forward of its normal installed position. Other leakage that may occur at this point may best be corrected by replacing the drain screen gasket with a new one. Increased gasket pressure may be obtained by turning in on the set screw mounted in the handle.

The drain screen handle may be replaced by removing the hinge pin. This is best removed by using a hack saw to cut off the flattened end of the pin. The pin should be replaced with a cotter pin or with a new pin. If a new pin is used, flatten the end so it will not fall out of the drain screen handle.

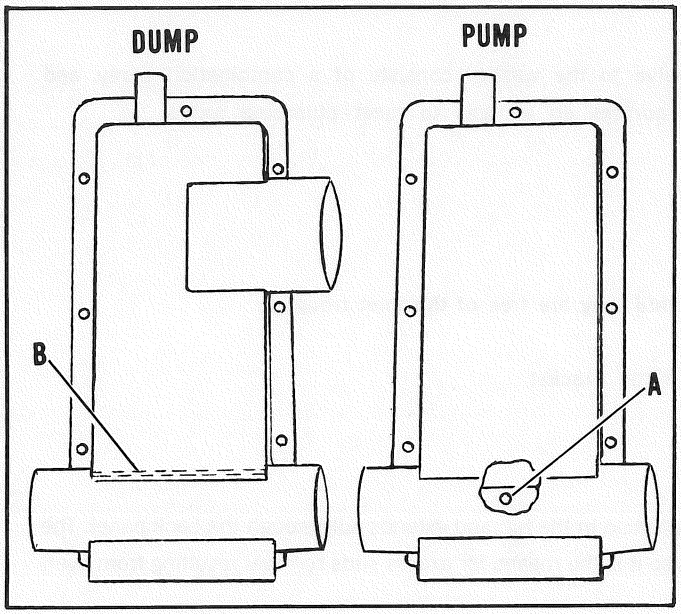


Figure 3 - 6. Drain Housing

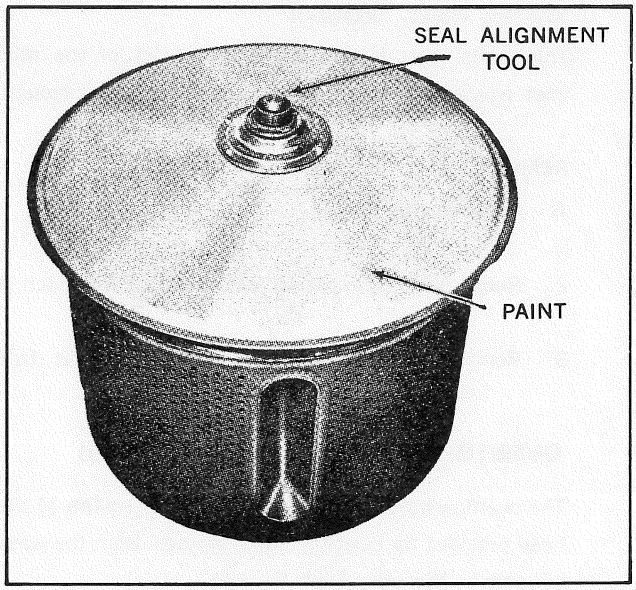


Figure 3 - 7. Seal Installation

DRAIN HOUSING

The pump housing will accept the drain screen assembly, which seals to the front housing opening.
The dump housing requires no drain screen or sealing plate on the front opening. The housing compartment is blocked off with a partition. (See item "B" in Fig. 3 - 6.)

REMOVAL

1. Open the service door and remove the drain screen. (Pump Models Only.)
2. Remove the nut found immediately behind the housing opening. (See insert "A" in Figure 3 - 6.)
3. Remove the remaining nuts and lockwashers and drop the housing.
4. Remove the gasket and the eight carriage bolts.

INSTALLATION

Turn the cylinder so that a baffle is directly above the tub opening. This will allow room to place the bolt.

1. Place the carriage bolts into the drain duct. Use new rubber seal washers on each bolt.
2. Paint one surface of the housing gasket with a sealing compound. Press it against the drain duct and over the carriage bolts. Make certain the bolts are fully pressed through the gasket holes.
3. Carefully place the housing in position over the bolts, taking care not to push the bolts up and out of the duct.
4. Place a lockwasher and nut on each bolt, again taking care to start the nuts without raising the bolts.
5. Pull the nuts up snug, but not so tight as to cause the gasket to be extruded.
6. Complete installation as indicated and check for leaks.

TUB BACK

The tub back, which is mounted on back of the tub assembly by a clamping ring, houses the cylinder support bearings and the cylinder shaft seal. This seal is attached to the tub back with six screws. Two ball bearings are pressed into the steel hub of the tub back. one at each end of the hub. The bearing at the water-side of the hub is protected by an oil seal. The seal is installed with the lip facing the bearing side. (See Figure 3 - 8).

REMOVAL

1. **Disconnect the power cord.**
2. **Turn off the water supply faucets and disconnect the inlet hoses from the inlet valve.**
3. **Unbolt machine. Remove the machine from the mounting base if one is used.**
4. **Remove the top and back panels.**
5. **Tip washer over on its face. Place a rug on the floor to cushion and protect the machine.**
6. **Remove the upper channel assembly and lay it on top of the tub.**
7. **Remove the cylinder drive belt.**
8. **Remove the tub back clamp ring. The nut and bolt securing this clamp ring is at the 1 o'clock position, when facing the tub back.**
9. **Pull the cylinder and tub back out of the tub assembly.**
10. **Remove the tub back nut.**

    NOTE: This is a left hand thread — turn clockwise to remove.

11. **Pull pulley off its shaft and remove the Woodruff key.**
12. **Remove the tub back from the cylinder shaft.**

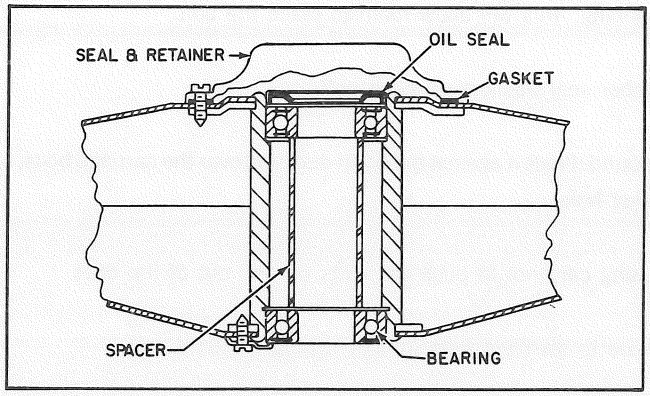


Figure 3 - 8. Oil Seal Application

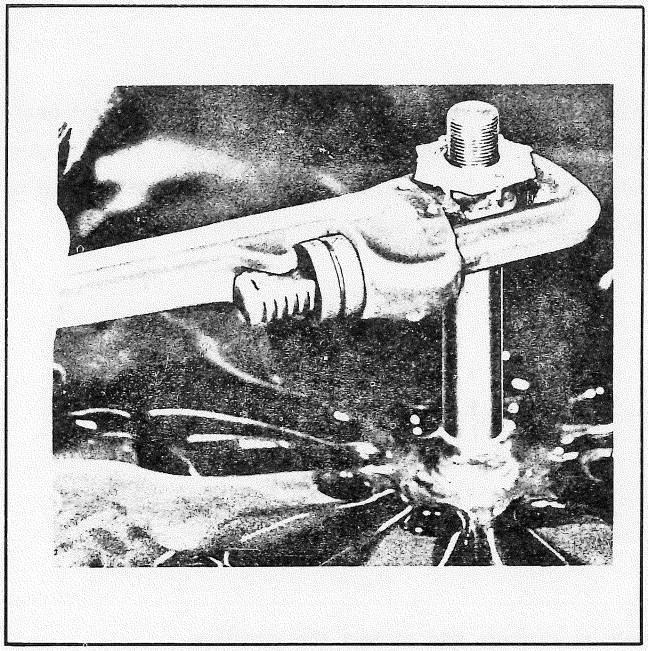


Figure 3 - 10. Cylinder Shaft Removal

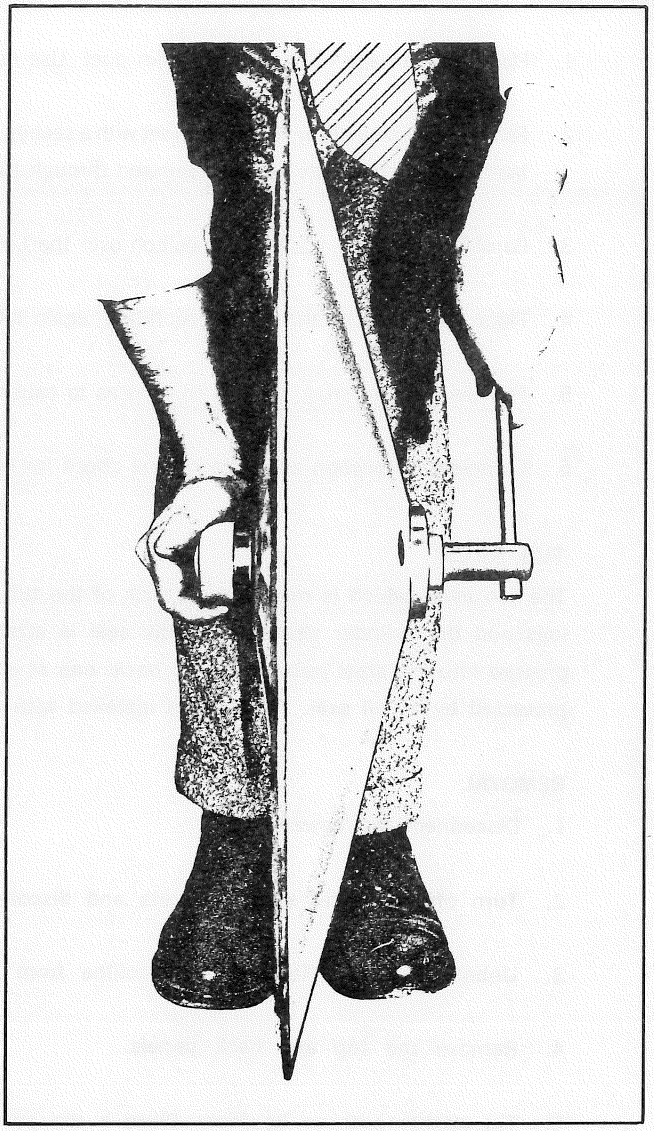


Figure 3 - 9. Installation of Bearings

TUB BACK SEAL

The tub back seal is used to prevent water from leaking into the bearings.

If a leaking seal is suspected, remove the back panel and examine the small hole at the 6 o'clock position of the tub back for evidence of a water puddle. Water and soap streaks may also be seen by looking through the large hole around the tub back toward the inside of the water side plate, if a leaking seal exists.

Tub back bearings should always be replaced when a seal leak exists.

REMOVAL

1. Remove the tub back as outlined.

2. Place the tub back on a flat surface, seal up, and remove the six screws securing the seal to the tub back.

3. Remove the seal and gasket.

INSTALLATION

1. A service parts kit (9702-119) is available for replacement of the seal. To assemble the seal and housing properly, wipe a solution of mild soap and water around the inside of the rubber bellows between the metal and rubber (do not use silicon or oil). Insert the seal in the recess of the plastic housing and apply hand pressure until the seal is bottomed in the recess. To insure the seal is installed properly, turn the assembly over and place the phenolic face on a clean flat surface, and press down evenly on the base of the seal housing. The rubber bellows should be bottomed in the recess and the metal cup should not be tilted in the rubber bellows when viewing it from the underside of the housing.

2. Place the tub back assembly, seal side up, over the cylinder shaft. (See Figure 3 - 7.).

3. Place thc gasket on the tub back and align the six holes with the tub back holes.

4. Place the seal in position and start the six screws in the mounting holes.

5. Tighten the six screws in a criss - cross pattern.

6. Remove the tub back from the cylinder shaft. cylinder shaft.

NOTE: When a tub back seal and retainer is replaced, the cylinder seal face should also be replaced. (See cylinder assembly for procedure.

TUB BACK BEARING

REMOVAL

1. Remove the tub back assembly as outlined.

2. Remove the tub back seal and retainer.

3. Remove the two bearing clips found on the opposite side of the assembly.

4. Place the tub back over an open box and press the bearing spacer aside with a long screwdriver.

5. Place a long blunt - nose drift pin through the top bearing and against the outer race of the opposite bearing. Strike the pin a sharp blow. Shift the drift pin to the other side of the bearing being removed and strike the drift pin again. Repeat this procedure until the bearing is free of tub back hub.

INSTALLATION

1. Figure 3 - 9 illustrates the use of the bearing press and bearing adapter tool.

2. Start one bearing in the hub on the pulley side of the tub back. Press the bearing in until it bottoms against the shoulder in the hub.

   NOTE: Watch the bearing closely as it enters the hub, if it is not entering straight, gently tap on the bearing at the high side to straighten it out.

3. When the bearing is bottomed, it should be flush with the tub back hub.

4. Install the spacer in the tub back housing. Repeat Step No. 2 for the water side bearing. Be sure the spacer is in position.

5. Pull the bearing in until the spacer is lightly bound between the front and rear bearings.

   NOTE: The water side bearing must be pulled in at last 1/4" - 5/16" below the surface of the tub back to allow the space necessary for the lip seal. (Oil seal).

6. Install lip seal (oil seal) in front of water side bearing.

7. Install the two bearing clamps on the pulley side of the assembly.

CYLINDER SHAFT AND SEAL FACE

The perforated cylinder has four equally spaced baffles to lift and distribute the clothes load during the washing cycle. The belt driven cylinder pulley is keyed to the cylinder shaft. To service the cylinder assembly proceed as follows:

REMOVAL

1. Remove the tub back and cylinder assembly as outlined.

2. Place the cylinder on its face with the shaft up.

3. Place a screwdriver under the seal face and pry up. Remove the rubber seal face gasket.

4. The cylinder shaft may be removed as illustrated in Figure 3 - 10. This is a left hand thread so the shaft must be turned in a clockwise direction to remove. Replace the Woodruff key in the cylinder shaft and position an old pulley hub over the shaft and key. This provides a surface to grab with a pipe wrench while turning the shaft out of the cylinder.

INSTALLATION

1. Clean the sealing face seating area of the cylinder hub with a wire brush.

2. Replace the cylinder shaft — left hand thread — so turn counterclockwise to install.

3. Place a small amount of sealing agent on the cylinder hub. Install a new seal face gasket over the hub.

4. Install a new seal face as illustrated in Figure 3-11.

   NOTE: Note the "flat" in the inner circumference of the face. This flat should coincide with the flat on the cylinder hub to prevent the face from rotating during operation.

5. Install copper gasket and lip seal spacer on shaft. Copper gasket goes between cylinder hub and the spacer.

6. Complete installation as indicated under tub back installation.

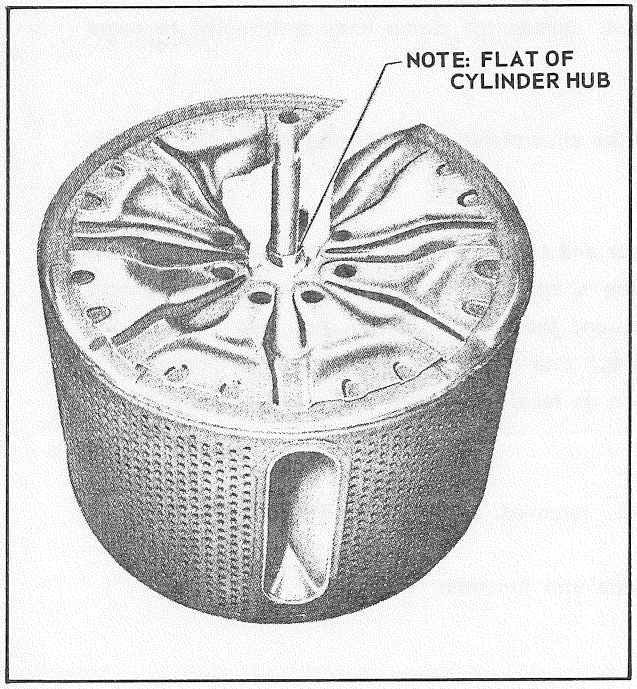


Figure 3-11. Seal Face Installation

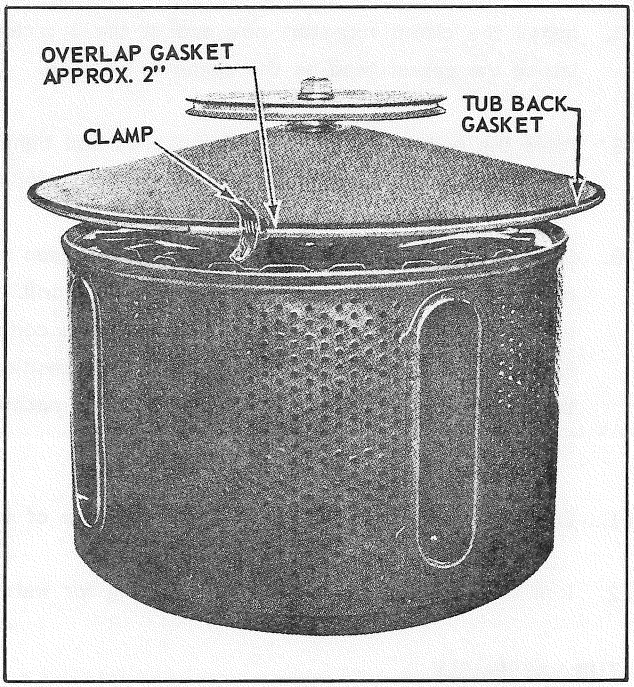


Figure 3-12. Tub Back Gasket Installation

TUB BACK INSTALLATION

After necessary service of the components in the tub back and / or cylinder assemblies have been completed, proceed as follows:

1. Remove the clothes door and tip the washer on its face. Place a rug on the floor to protect the finish.

2. A locator hole will be found in the top of the tub back. Start one end of the tub back gasket at this point. The bead on the gasket should be up.

Run the gasket around the tub back, overlap the ends approximately 2 inches and secure in position with a clamp. (See Figure 3 - 12.)

3. Lift the cylinder and tub back by the pulley. Take care not to brush the gasket as the assembly is raised.

4. Place the assembly in the tub so the locator hole in the tub back is directly over the locator hole in the tub flange.

5. Remove the clamps securing the tub back gasket. The weight of the tub back against the tub will hold the gasket in position.

6. Center the tub back over the tub assembly. Check by running your fingers around the tub and tub back circumference. They should be equally spaced around the entire circumference.

   NOTE: Do not let the tub back move after this check.

7. Check the tub back gasket bead to make certain it has not been pulled out of position.

8. Install the clamp ring-start one end at the 1 o'clock position. Spread the clamp ends sufficiently, to avoid letting the gasket bead as the clamp is installed.

9. Place the bolt and nut in the clamp ends and tighten. Tap the circumference of the ring as the nut is tightened to guarantee equal pressure all the way around.

10. Set the machine upright. Check the gap between the cylinder and tub at the clothes door opening. This gap may be checked with a 3/16" drill and a 5/16" drill. Insert the shaft of the 3/16" drill between the cylinder throat and the tub throat. This drill should go completely around the cylinder to tub gap. Use the 5/16" drill to check the gap at 5:00, 6:00, and 7:00 positions. The 5/16" drill should not go in at these positions. If the gap at the bottom is excessive, turn the machine over on its face, loosen the clamp and shift the tub as required to close the gap.

11. Complete installation by replacing the balance of components removed. (See Figure 4-9 For Details)

12. Run the washer through a cycle, checking for water leaks and unit function.

TUB ASSEMBLY

The tub assembly is the outer shell or housing for the cylinder.

REMOVAL

1. Remove the top, front, side, and back panels.

2. Remove the tub back and cylinder assembly.

3. Remove the hoses attached to the tub.

4. Remove the tub assembly.

5. Remove the drain housing.

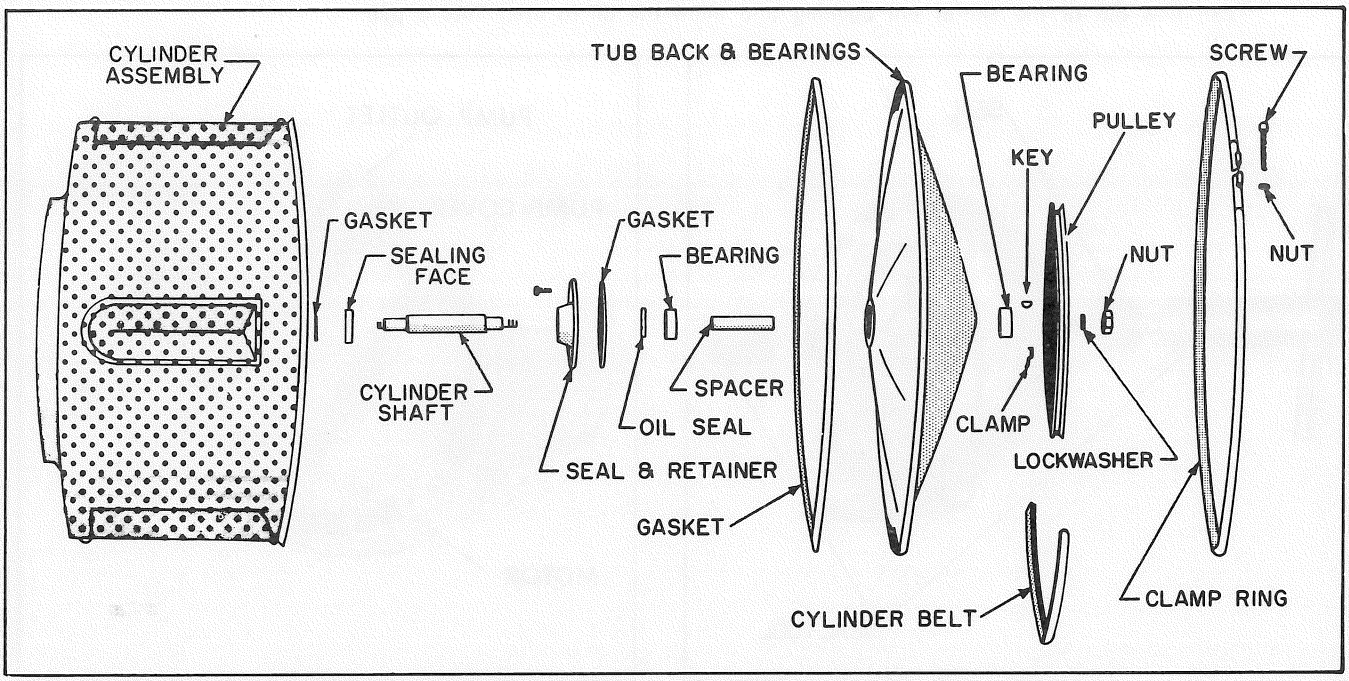


Figure 3 - 13. Exploded View Of Cylinder, Tub Back And Pulley Assembly

MOTOR, PUMP, AND TRANSMISSION ASSEMBLY REMOVAL

1. Remove back panel.

2. Disconnect wires to the motor, high speed spin solenoid, intermediate spin solenoid and pump solenoid. (Pump solenoid on pump models only.)

3. Remove two screws securing pump solenoid to pump and lift solenoid out of the rocker arm slot. (Pump models only.)

4. Remove the rocker arm and spring from the pump. (Pump models only.)

5. Disconnect the sump to pump hose and the drain hose. Remove the drain hose from the cradle assembly. (Pump models only.)

6. Loosen front motor mounting bracket from tub bracket by removing nut from mounting stud. Remove nut and lockwasher that holds rear motor mounting bracket to rear mounting stud. (Also, change nut shown in photo.)

7. Remove drive belt from pulleys and release motor hold-down spring.

8. Lift front of motor so that front mounting bracket is free of slot. Pull motor and transmission toward rear of the cradle until the rear motor mounting bracket is free of the cradle. Rotate the motor in such a manner so as to allow the capacitor to clear the opening in the rear channel as the entire assembly is moved out toward the rear of the unit.

9. Remove the high speed shifter from the side of the transmission housing, turn the entire assembly so the oil can flow out of the shifter pin opening and allow the oil to drain into a pan.

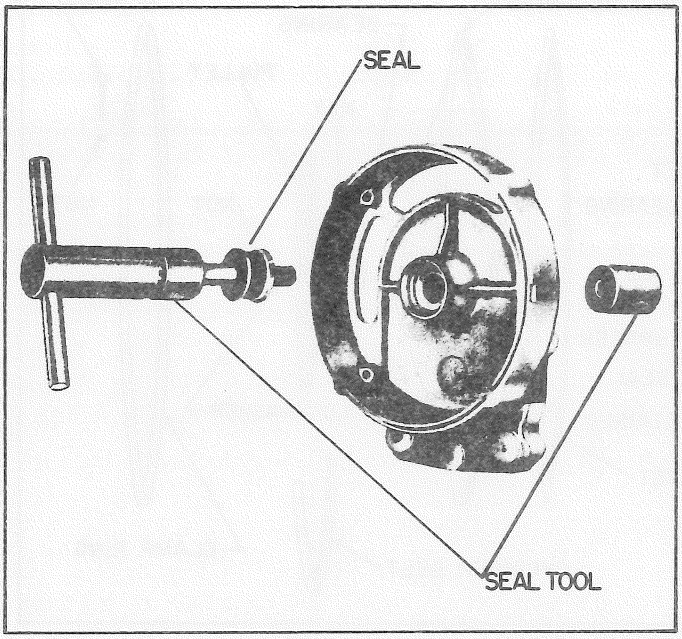


Figure 3 - 14. End Bell Inserting Tool

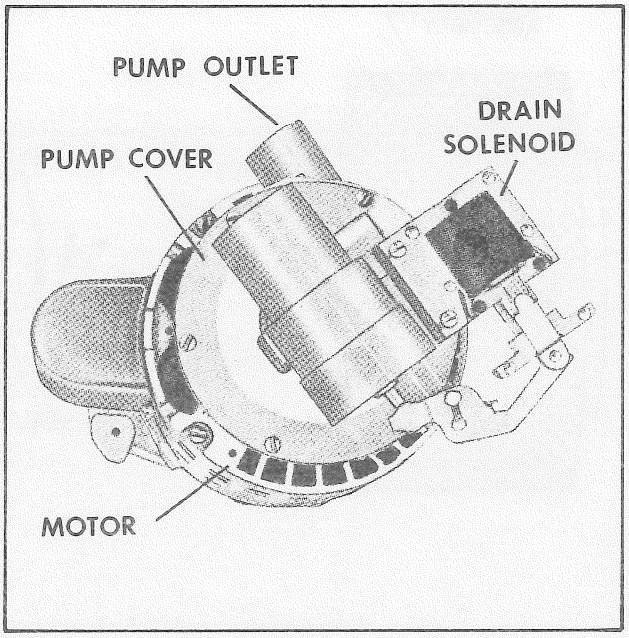


Figure 3 - 15. Pump Cover And Solenoid

MOTOR

Service on the motor assembly proper is normally done by the motor manufacturer repair station. However, the transmission end bell is serviceable since it carries the jackshaft bearing and the sleeve bearing used on the motor shaft. Therefore, the transmission end bell and its bearings and seal may either be serviced by the self-servicing dealer or by the authorized motor repair station. Motor failures should always be serviced by the authorized repair station which may be contacted direct or through your distributor.

DISASSEMBLY

1. With the pump and transmission removed from the motor, scribe a mark along the length of the motor so the end bell and frame relationship is marked.

2. Remove the four long tie bolts holding the two end bells to the frame.

3. Hold the motor frame securely by means of a vise or other means and lightly tap the transmission end bell with a soft mallet. Take care to drive the end bell off evenly.

   NOTE: Do not remove the pump end bell or the motor rotor.

4. The jackshaft bearing is removed by driving the welsh plug out of the end bell.

5. Press the needle bearing out through the end bell in the direction of the welsh plug.

6. The motor shaft seal and bearing may also be removed in the same manner as the jackshaft bearing.

REASSEMBLY

1. Clean the bearing hole in the end bell thoroughly.

2. Press the new jackshaft bearing in through the hole from the welsh plug end. Both ends of the bearing are identical. It is important this bearing be kept square with the end bell during the pressing operation.

3. Place a new welsh plug gasket over the bearing.

4. Paint the edge of the welsh plug with a sealing agent. Be careful not to get any sealant on the bearing surface.

5. Drive a new welsh plug into position, making certain it is clinched properly.

6. To replace the motor shaft bushing, press the bushing into the end bell from the transmission end so the ⅛" hole in the bushing is on the transmission end and lines up with the "V" opening in the end bell boss. The bearing should be pressed flush with the machine surface of the boss.

7. Line ream the bushing to a .500 diameter.

8. To replace the motor shaft seal. clean the seal area of the housing thoroughly. Place a sealant on the edge of the seal and press it into the end bell until it is square with the top of the bossed area.

   NOTE: This seal prevents oil leaking from the transmission into the motor shaft. The lip should extend toward the transmission.

9. Carefully slide the motor shaft through the seal and bushing of the transmission end bell and align so that the marks made prior to disassembly will meet as the end bell is driven into the frame of the motor. Replace the four long tie bolts connecting the two end bells.

PUMP

Type: Impeller attached directly to the motor drive shaft.

Capacity: The pump has a discharge rate of approximately 17½ gallons per minute, and is normally closed.

Valve Assembly: Solenoid operated. All valve components are located in the pump cover.

Drain Path: When the pump solenoid is energized to drain the tub, water flows by gravity to the drain screen where any foreign objects are collected. The water then passes through a sump to pump hose, through the open pump valve into the pump housing. The turning impeller forces the water out of the unit through the discharge opening and into the drain hose.

SOLENOID AND PUMP COVER

The pump assembly is mounted directly to the front end bell of the motor as illustrated in Figure 3-15. Pump service may be readily accomplished with the motor, pump and transmission still in the machine.

REMOVAL

1. Disconnect the power supply and open the service door.
2. Remove the plastic shield covering the pump solenoid and motor terminals.

   NOTE: Always keep this shield in place except when servicing. It is protection against accidental contact with live electrical components.

3. Remove the wires from the pump solenoid terminals.
4. Remove the two screws and lockwashers securing the solenoid to the pump cover. Lift the solenoid up until the armature pin clears the slotted rocker arm.
5. Remove the sump to pump hose from the pump connecting point.
6. Remove the six screws securing the pump cover and valve to the housing. One screw has a lockwasher to prevent it bottoming in a blind hole.
7. Unlock the rocker spring and slide the rocker arm to the left on the pivot stud until the large hole is opposite the stud head. Pull the arm forward to clear the stud head and remove from the plunger.
8. Remove stud, nut and washer.
9. To remove the gland, and plunger assembly, grasp the tail of the snap ring with needle nose pliers and pull it out of the groove in the housing.
10. Place a screwdriver handle in the inlet opening of the pump and force the plunger and gland out the opposite end.
11. Slide the diaphragm ring off the open end of the diaphragm.
12. Snap the diaphragm off the plunger assembly.

INSTALLATION

1. Replace as indicated above, taking the following precautions.
2. Make certain the plunger is snapped into the diaphragm groove and the ring is properly replaced. (See Figure 3-16). This ring prevents the plunger from pulling out of the diaphragm resulting in no drain.
3. Replace the gland and diaphragm assembly.
4. Fit the snap ring into the snap ring groove to retain the gland. Use a "C" clamp or press to press the gland into the pump front until the above mentioned groove is exposed.
5. Replace the "O" ring gasket and complete assembly.
6. When replacing the rocker arm, make certain the "U" formed at the base, is in the plunger groove and does not tend to ride up on either shoulder of the plunger. Tighten with a pair of pliers if necessary.

7. Complete installation and check through a drain cycle for time and leaks.

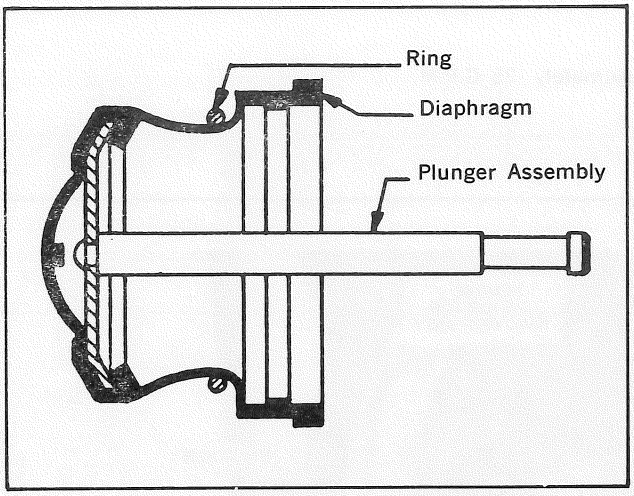


Figure 3 - 16. Plunger and Diaphragm

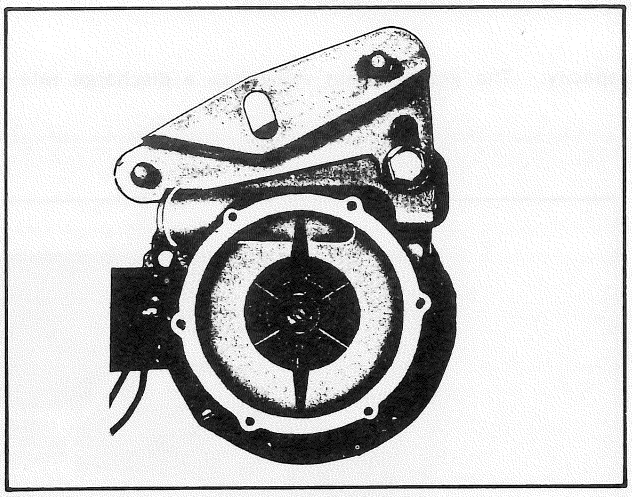


Figure 3 - 17. Pump Impeller

HOUSING IMPELLER AND SEAL

REMOVAL

1. Remove the pump cover.
2. Remove the impeller screw (See Figure 3 - 17). Grasp the ears of the impeller and pull it off the shaft.
3. Remove the pump seal and the two screws securing the housing to the end bell. Use a large screwdriver to avoid damage to the screw slots.

INSTALLATION

1. Replace worn parts as necessary.
2. Before installing the housing, clean the motor shaft of rust or burrs with emery cloth. Install the housing using new "O" ring seals.
3. Examine the seal area of the housing and clean out all foreign material before installing the new seal.
4. Apply a bead of silastic sealer or caulking to the seal cavity before assembling the new seal.
5. Place a new seal over the shaft with the seal nose out, so the two ears are in line with the slots in the housing.
6. Assemble the impeller on the motor shaft and install the attaching screw. Make certain a new sealing ring is in place on the back side of the impeller.

GRAVITY DRAIN VALVE

Type: Motor driven, normally open.

Capacity: The gravity drain valve has a discharge rate of approximately 25 G.P.M.

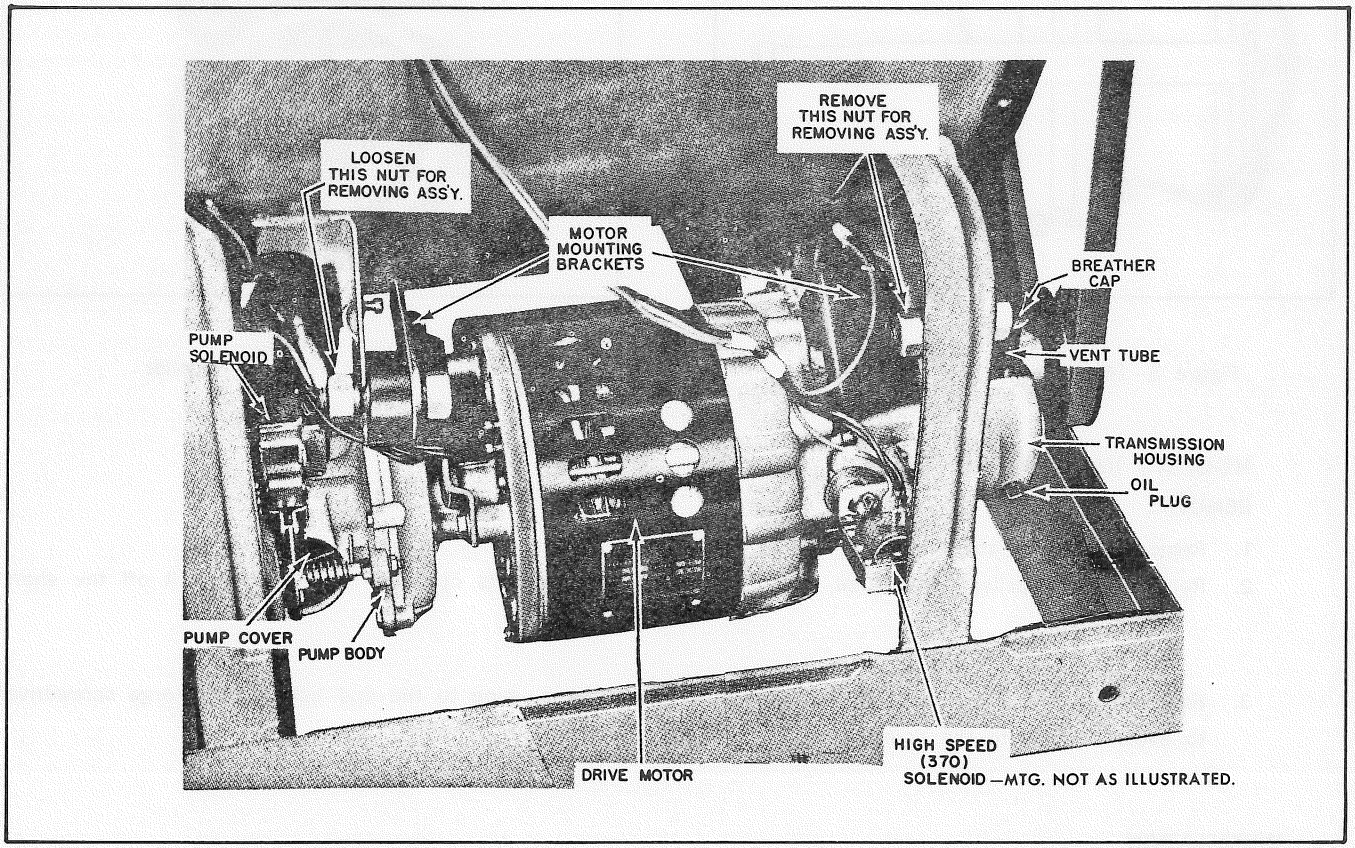


Figure 3 - 19. Pump, Motor, and 3 - Speed Transmission Assembly

OPERATION OF 3-SPEED TRANSMISSION — SPRING CLUTCH TYPE

The spring clutch type transmission (refer to Figure 4-10) drives the clothes cylinder at the following speeds: Low Speed @ 50 rpm., Intermediate Speed @ 205 rpm., and High Speed @ 370 rpm. The transmission provides a means for operating the cylinder at the three speeds while the motor speed remains constant. This is accomplished with a shifter rod and solenoid assembly arrangement which controls the speed changes in the transmission. Spring clutches activate the respective gear trains at the appropriate time for the intermediate and high speeds.

The motor and transmission assembly is mounted to the base assembly by means of two mounting brackets. These brackets then pivot from the base for belt tensioning purposes (See Figure 3-19).

LOW SPEED

During the low speed periods, the power flow is from the motor drive shaft, through the drive shaft to the low-speed pinion drive gear. The low-speed driven gears on the jackshaft is in constant mesh with the pinion drive gear. Since the driven gear is not keyed to the jackshaft, the gear turns at a constant speed, all the time the motor is in operation. Mounted next to the low-speed driven gear and keyed directly to the jackshaft is a threaded screw equipped with a nut and male lugs shaped to fit milled slots on one side of the driven gear. Assembled in a groove on the outer edge of the nut is a drag spring with an eyelet in the end that hooks on the retaining pin in the side of the driven gear. In low speed, the action of the drag spring causes the nut to thread itself toward the driven gear. With the driven gear and low-speed clutch nut thus locked together, the jackshaft must turn with the low-speed driven gear.

To effectively utilize the jackshaft power, a pulley is employed. This pulley permits belt linkage with the large cylinder pulley. The cylinder assembly rotates at 50 rpm. on low-speed transmission operation.

INTERMEDIATE SPEED

This speed is controlled by the solenoid shifter assembly mounted closest to the motor pulley. When this solenoid is energized, the shifter rod is pulled away from the clutch sleeve allowing a left hand clutch spring to close. The power is then transferred to the intermediate drive gear, jackshaft and motor pulley. The tumble speed clutch is automatically disengaged at this time, allowing the tumbler (low) speed gears to free wheel.

HIGH SPEED

This speed is controlled by the solenoid shifter assembly mounted closest to the motor end bell. When this solenoid is energized, the high speed shifter rod is pulled away from a clutch sleeve, allowing a right hand clutch spring to close. The power is then transferred to the driven gear, jackshaft and motor pulley.

SHIFTER SOLENOID

The shifter solenoid is a device for converting electrical energy into a mechanical pull force needed to operate the clutch. It consists of a laminated iron field supporting a coil which is wound around a hollow plastic core, providing space for an armature that moves endwise into a metal guide. When the coil is energized, it sets up a magnetic flux in the field laminations which passes through the armature and draws the armature into the coil. Two shading coils direct the path of the magnetic field to the "T" of the armature, providing an efficient circuit increasing the holding force of the solenoid and eliminating residual magnetism when the coil is de-energized.

SHIFTER ROD ASSEMBLY

The tip of the shifter rod enters the transmission housing to engage the teeth on the clutch sleeve. This action allows the clutch spring to turn and grab the inner gear shaft thus transferring the power through the clutch spring. If there is any evidence of wear on the engaging end of the shifter rods, new parts should be installed. Freedom of movement of the shifter rods is important; hence, close inspection should be made whenever the transmission is serviced.

SERVICING 3-SPEED TRANSMISSIONS

Transmission service may be accomplished with the motor and transmission assembly still in the unit. Removal of the housing will permit complete exposure of the entire transmission gear train.

SHIFTER ROD ASSEMBLY REMOVAL

1. Pull the cotter pin connecting the rod to the solenoid. (Interm. Ass'y. Only)
2. Remove the screws holding the solenoid mounting bracket to the transmission housing and remove the bracket.

   NOTE: Wires going to the shifter solenoid may be left in place on the solenoid.
3. Remove the return spring and washer from the shifter rod. (Interm. Ass'y. Only)
4. Pull shifter rod out of the transmission housing.

   NOTE: There is a special "O" ring installed on the shifter rod. When replacing the shifter rod or servicing the transmission, be sure to inspect the "O" ring and replace if it shows any sign of wear.

RE - ASSEMBLY

1. Reassemble in reverse order as outlined under removal.
2. Install the shifter solenoid assembly to the housing with two screws. Hand operate the solenoid for free movement of the shifter rod in the transmission housing. Adjust the solenoid bracket to avoid any interference.

DISASSEMBLY OF HOUSING AND TRANSMISSION

1. Disconnect the power supply and remove the back panel.
2. Disconnect the wiring leads at both shifter solenoids.
3. Place a shallow pan under the transmission to catch the oil.
4. Remove the cylinder drive belt.
5. Remove the screws securing the shifter solenoid brackets and remove.
6. Release motor hold down spring and intermediate speed shifter rod sleeve. Remove screws securing the transmission to the motor end bell, and complete removal.

7. Remove motor pulley from jackshaft. (Two allen set screws).

8. Remove the high speed drive gear assembly, pinion gear, and jackshaft gear assembly. Be sure to recover the thrust washer at the low-speed gear end of the jackshaft.

JACKSHAFT OIL SEAL

The transmission housing jackshaft oil seal should be replaced whenever work is performed on the transmission.

REMOVAL

1. Place a small drift pin through the housing needle bearing at an angle so the tip rests against the inside edge of the seal.

2. Tap out the seal by moving the drift pin from one side to the other. Do not damage the needle bearing during this operation.

3. Clean the seal surface in the housing until it is free of sealing compound.

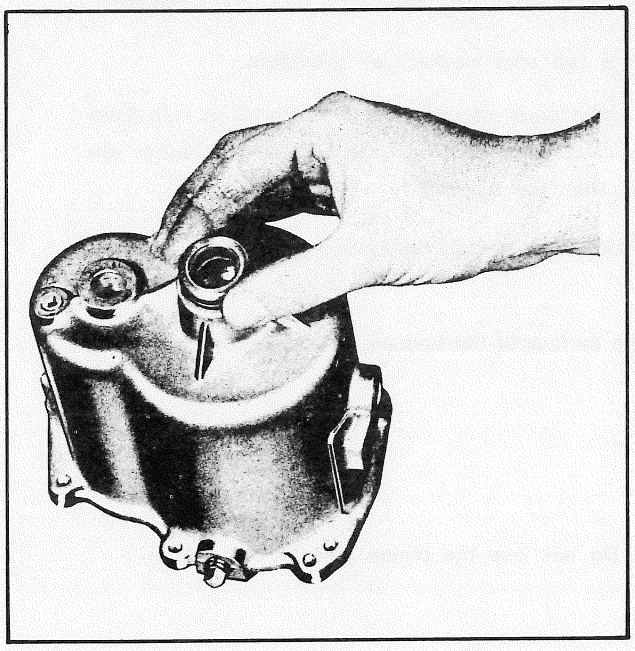


Figure 3 - 20. Jackshaft Seal Installation

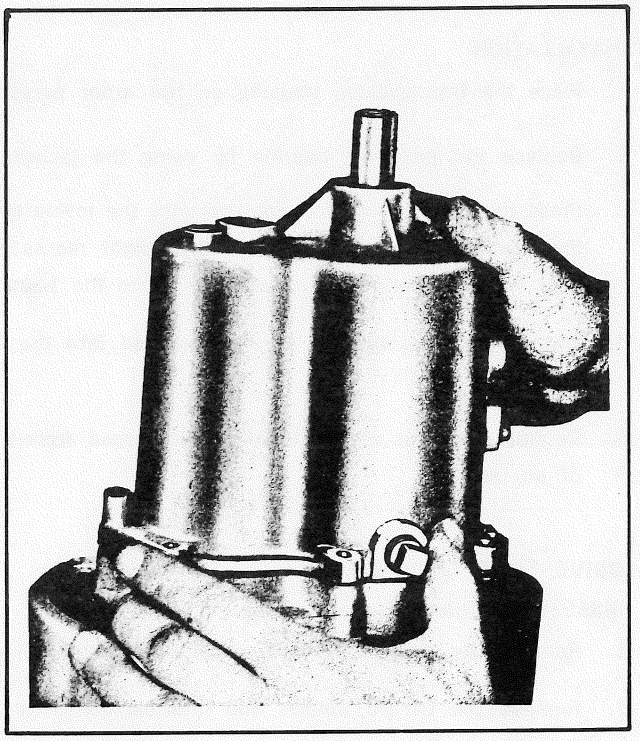


Figure 3 - 21.

INSTALLATION

1. Paint the outer edge of new seal with sealing compound. Lubricate seal lip.

2. Place the seal in position. (See Figure 3 - 20).

3. Gently drive the seal into position with a mallet or hammer. Take care to keep the seal square with the housing.

4. Continue to drive the seal in until the rounded edge is almost flush with the outside edge of the housing hub.

HOUSING BEARINGS

No attempt should be made to replace the bearing mounted in the transmission housing unless an arbor press is available.

REMOVAL

1. Remove the jackshaft oil seal, then press the jackshaft bearing out from the inside of the housing toward the seal opening.

2. The motor shaft bearing can be removed in a like manner.

INSTALLATION

1. Place the transmission housing on the arbor press with the machined surface face down on the surface plate.

2. Replace the jackshaft bearing by using the jackshaft and the two split washers as shoulders.

3. Press the bearing into the housing until the inside end of the housing is approximately 1/64th of an inch from the machined face of the hub. This slight recess is necessary in order that the jackshaft thrust washer will bear against the machined surface inside the housing rather than the bearing.

4. The motor shaft bearing may be pressed into the housing from the outside using the same basic method outlined above.

5. Be sure the end of the bearing is recessed from the outside surface of the housing by approximately 1/64th of an inch.

DRIVE SHAFT ASSEMBLY

DISASSEMBLY (Refer to Figure 4-10)

1. Remove the drive shaft and gear assembly from housing. Do not lose the pinion gear thrust washer.

2. Remove the tru-arc washer and intermediate drive gear.

3. Remove the key from the drive shaft.

4. Hold the clutch retainer sleeve and turn the high-speed gear off the shaft.

5. Rotate the sleeve in a counterclockwise direction to open the clutch and pull it off the drive shaft.

6. Tilt the clutch spring at an angle and gently pull until free. Remove the spring through the tooth end of the sleeve.

REASSEMBLY

1. Examine all components and replace any that show evidence of wear.
2. Be sure and examine the clutch spring grabbing areas on the drive shaft and the high-speed drive gear. The spring tab in the clutch sleeve hole should be perpendicular to the spring coils. If the tab is bent, replacement is indicated.
3. Slide the clutch spring into the smooth end of the sleeve. Position the spring so the tail protruding off the end of the spring is opposite the hole in the sleeve. Slightly distort the spring and press it forward until the tail enters the hole in the sleeve.
4. Place the sleeve and the spring on the drive shaft. Turn the sleeve in a counterclockwise direction and press forward until the spring bottoms on the drive shaft bushing.
5. Place the high-speed gear (long hub first) on the drive shaft, press forward and turn gear until the gear hub fully enters the spring.
6. Replace the key in the drive shaft and slide the intermediate drive gear over the shaft.
7. Replace the tru-arc ring.
8. Assemble the thrust washer on the pinion gear.
9. Complete installation as outlined on page 3-32.

JACKSHAFT GEAR ASSEMBLY

DISASSEMBLY (See Figure 4-10)

1. Starting at the high-speed driven gear end, remove the large thrust washer.
2. Remove the snap ring. A sharp point on a small screwdriver will help spread this ring so it may be removed.
3. Slide the high-speed gear off the shaft. If the gear binds, use a wheel puller.
4. Remove the two split washers held in position by the countersink in the rear of the gear.
5. Remove the Woodruff key.
6. Remove the intermediate speed gear off the shaft.
7. Remove the drive spring and sleeve from either the shaft or gear, whichever retains the spring.
8. Remove the clutch nut drag spring, clutch nut and screw.
9. Remove the Woodruff key, low-speed gear, and split washers.

10. Remove the low-speed gear pin.

11. Clean all components and examine for wear or broken parts.

REASSEMBLY

1. Start with the jackshaft and install the parts from right to left on the jackshaft **(See Figure 4-10)**

2. The low-speed gear and pin, drag spring, and low-speed clutch nut make up a sub-assembly. Snap the drag spring on the gear pin so the spring runs in a counterclockwise direction, (from pulley end of transmission). Next snap the clutch nut into the ring. Note the two embossments or lobes on the clutch nut. These embossments must face the low-speed gear and pin so they can enter and hold in the recessed grooves during tumbler speed.

3. Place the two split washers in the groove closest to the pulley end of the jackshaft. Drop the low-speed gear assembly on the jackshaft from the right so the counter bore in the gear holds the washers in place. Maintain a constant pressure while assembling the balance of the parts to avoid losing the split washers.

4. Complete installation of the parts making certain the washers and keys are placed as each succeeding part is installed.

5. After replacing the snap ring in the last groove in the jackshaft, place the thrust washer on the assembly. Note this washer is counterbored to fit over the snap ring.

REASSEMBLY OF HOUSING AND TRANSMISSION

INSTALLATION OF JACKSHAFT IN TRANSMISSION HOUSING

1. Slide the jackshaft through the jackshaft seal in the housing.

2. With the jackshaft properly assembled, insert the pulley end of the jackshaft through the bearing and into the seal tool.

3. With the jackshaft fully inserted, pull the tool out of the seal and off the jackshaft.

4. Install the motor pulley on the shaft.

INSTALLATION OF DRIVE SHAFT IN TRANSMISSION HOUSING

1. Assemble the thrust washer onto the pulley end of the pinion drive gear and insert the pinion shaft into the housing bearing.

2. Assemble the drive gear cluster onto the pinion gear shaft and mesh the drive and driven gears together.

INSTALLATION OF HOUSING AND TRANSMISSION TO MOTOR END BELL

1. Place the large thrust washer on the motor shaft flush against the motor end bell boss.
2. Turn this motor shaft so its flat sides are parallel to the floor.
3. Apply sealant to the housing face.

   When serviced, the groove and end bell surface should be cleaned free of oil or grease. Apply a continuous bead of sealer into the groove sufficient to assure the groove will be filled, plus squeeze out onto the surfaces beside the groove.

   The housings now being used in production no longer have the groove depth maintained to allow the use of the 9206-105 gasket. Any transmission built, using the silastic sealer should also be serviced using the silastic sealer. Older transmissions serviced can also utilize the new sealer.

   NOTE: The silastic-Silicone Rubber Sealant can be procured through any hardware or other type supply stores. The two types used with equal success are: Dow Corning Silastic - Type 732, and General Electric Silicone Rubber Sealant. They are available in three or five ounce tubes, which will service quite a number of transmission repairs.

4. Turn the inner drive shaft until its double flat is parallel to the bottom of the housing.
5. Align the housing assembly and insert the jackshaft into the jackshaft bearing in the motor end bell.
6. Rock the pulley slightly as the housing is pressed forward to align the inner drive shaft flats with the motor drive shaft flats.
7. Install the six screws holding the housing to the motor and check by hand, turning the motor pulley to make sure a bind does not exist. If the pulley will not turn, check the motor and thrust washers on the drive shaft and the component stack-up on both the jack and drive shafts.
8. Replace the intermediate and high-speed shifter assemblies.

   CAUTION: To avoid damage to the clutch spring, the shifter solenoid assemblies should not be installed until the housing is securely attached to the motor end bell.

OIL LEVEL

The oil level in the transmission should be checked at time of installation.
Additionally, it should be checked every three months or more often if required.

To check oil level:

1. Remove top panel.
2. Remove oil dip-stick from the oil fill tube (plastic) located in the right rear corner.
3. If additional oil is needed, add oil through fill tube using a common oil can or funnel. Replace dip-stick.
4. Reassemble removed parts.
5. Oil Capacity — 10¼ oz.

   NOTE: Oil used in the transmission is a special type. Use only this oil which is available from your dealer/distributor.

Trouble Shooting Guide

COMPLAINT	PROBABLE CAUSE	SUGGESTED REMEDY
Washer Does Not Start	Unit unplugged	Replace in electrical outlet.
	Blown fuse	Replace fuse.
	Circuit breaker tripped	Press reset button. Check motor for overload or short. Check machine for total amperage draw, if it exceeds the maximum rating, trace all circuits until trouble is located and repaired. If total amperage draw is less than circuit breaker rating then replace the circuit breaker.
	Broken wire	Check the test lamp or meter and repair.
	Defective timer contact	Check the timer with test lamp or meter. Repair or replace timer.
	Defective drive motor	Check motor for: 1.) Bad capacitor 2.) Defective start switch 3.) High amperage draw 4.) Circuit to ground 5.) Worn bearings If any of the above are found, repair or replace motor.
	Coin meter switch	Adjust to trip, each coin insertion.
	Coin accumulator	Switch settings — see page 3-10. Check for 12 volt impulse from coin meter switch. Transformer — 12 volt secondary. Replace accumulator board.
	Loose timer connectors	Check black and white multiple wire connectors, plugged into timer.
	Timer drive motor	Check timer drive motor — also motor wires to terminal connections.
	Delayed start	See starting sequence under Operating Instructions — See page 1-5.

Motor Starts But Cylinder Does Not Turn	Broken or loose belt	Check belt tightening spring, replace if broken. Replace belt if broken or badly worn.
	Loose or broken pulley	Tighten or replace pulley, (could be either transmission or cylinder pulley.)
	Broken, worn, or parts out of position in transmission housing	Disassemble transmission, replace worn or broken parts.
	Cylinder binding	Check for article of clothing or other foreign material that might be between the cylinder and outer tub and remove. Check for worn or binding tub back.
Cylinder Does Not Spin	Defective Solenoid solenoid does not pull shifter rod	Replace solenoid. Check for cotter pin that connects solenoid and shift rod, if missing install new pin. Check for binding shifter rod. May be caused by using wrong transmission oil that will swell shifter rod "O" ring making the rod stick.
	Broken or loose rear motor mounting bracket or stud	Tighten or replace the mounting bracket or mounting stud.
	Worn clutch spring	Overhaul transmission and replace worn parts.
	Loose belt	Tighten or replace.
	No current to spin solenoid	Check the timer contacts, pressure switch and wiring. Refer to wiring diagram.
	Water not completely drained	Clean drain screen. Check pump solenoid and replace if bad. Clean or repair pump. (Pump models only) Check sump for obstruction and clean if plugged. Check for plugged dump valve or defective valve and repair or replace. (Dump valve model)
	Woodruff key in transmission worn or missing	Disassemble transmission and repair.
Water Does Not Enter Washer	Clogged inlet screen or hose	Remove hose and check. Always replace strainer screens.
	Open solenoid coil	Check at terminals with test lamp or meter, replace if defective.
	Plugged drain outlet	Water not completely drained out from previous fill. Pressure switch has not reset.

(trouble shooting guide)

COMPLAINT	PROBABLE CAUSE	SUGGESTED REMEDY
Water Does Not Enter Washer	Split diaphragm in water valve	Replace diaphragm
	Defective water control	Check for obstruction in hose leading from sump to water control. Check water control with jumper wire or meter. Replace if not working.
	Plunger stuck in inlet valve	Remove inlet valve and clean or replace.
	Defective selector switch	Replace.
	Defective timer contacts	Repair or replace.
Water Does Not Drain (Pump Models)	Open pump solenoid coil	Replace solenoid.
	Stuck valve	Remove and clean.
	Loose or faulty pump impeller	Tighten or replace.
	Clogged lint screen	Remove and clean.
	Clogged kinked drain hose	Straighten, clean, or replace hose.
Water Does Not Drain (Dump Models)	Dump valve does not open	Tighten or replace return spring. Replace dump valve.
	Clogged sump	Remove cover and clean sump.
	Clogged hose from sump to dump valve	Remove obstruction from hose.
	Clogged dump valve	Clean dump valve.
Inlet Water Does Not Shut Off	Faulty water level control switch	Replace.
	Clogged pressure switch hose	Pressure switch is never satisfied.
Tub does not fill	Screen in water valve clogged	Remove and clean.
	Drain leaks	Check and repair.
	Bad contact on timer	Check and repair or replace.

(trouble shooting guide)

COMPLAINT	PROBABLE CAUSE	SUGGESTED REMEDY
Inlet Water Does Not Shut Off	Dirt in inlet valve chamber	Remove plunger covers and clean or replace parts. (always keep inlet water strainer screens installed.)
	Faulty plunger	Disassemble inlet valve-clean, replace diaphragm.
	Faulty timer contacts	Check with test lamp, replace defective part.
	Grounded valve solenoid	Replace solenoid coil.
Cylinder Spins All The Time	Shifter rods worn or broken	Check and replace.
	Shifter solenoid bracket loose	Check and tighten.
	Sleeve in trans-mission worn or broken	Replace.
	Excess end play in gear set	Worn bosses in housing, "C" rings worn or out of place.
Timer Does Not Advance (Complete Cycle)	Timer motor defective	Remove and check for gear rotation (replace).
	Timer gear worn	Replace
	Defective timer	Check, replace.
	Broken wire	Check circuit with test lamp.
Timer Does Not Rapid Advance (When Specified)*	Wired incorrectly	Check short or long cycle wiring instruction — page 3-9.
	Rapid advance motor	Defective — replace.
	*(Manual operation)	Also see rapid advance detail for acceleration switch on manual conversion — See page 3-7.
Irratic Cycle Operation	Wired incorrectly	Check GN-BK and WH-BK wires plugged onto separate terminals along side black timer connector. See instructions — page 3-9.

Section 4

PARTS DATA

Accessories

ACCESSORIES

5130-019-1 ..... Oil - 1 Gallon
9472-001-1 ..... Touch - up Paint - 16 oz. Aerosol Can - Wh.
9472-001-5 ..... Touch - up Paint - 16 oz. Aerosol Can - H.G.
9472-001-8 ..... Touch - up Paint - 16 oz. Aerosol Can - Alm.
Sealant - Transmission Housing Face — See Page 3-33 For Details.
Sturdi-Base Accessories — See Page 4-23.

INSTALLATION ACCESSORIES (furnished)

9990-027-011	Hose, Water Supply	2
8641-242-000	Washer, Inlet Hose	2
9565-003-001	Strainer, Inlet Hose	2
9054-047-002	Spacer, Unit Mt'g	4
8527-109-001	Decal-DOUBLE LOAD	1

Special Tool — Removal of coin acceptor (Torx Drive, Size T-9)
Available through Distributor — Pt. #8545-051-001. (not furnished)

CONVERSION —

Cold Water Only in Soak and Rinse —

Remove R-GN wire from terminal number 3 on the temperature selector switch. Tape off terminal on end of wire to prevent shorting.

Long Cycle — (includes soak) —

Short Cycle — (soak elimination) —

See instruction sheet — page 3-9.

KITS & ASSEMBLIES

Part Number	Description
9732-092-001	WCA20 coin box guard
9732-055-002	Manual Start Kit
9732-040-001	Lower Service Door Bracket and Fastener Kit
9732-038-001	Stator And Coil Kit Depend-O-Drain 120 Volt
9732-030-001	High Speed Solenoid Assembly New Style
9702-133-000	Pump Cover Kit
9702-119-000	Seal Kit
9702-112-000	Tub Back Seal Kit
9702-092-002	Tub Back Bearing and Seal Kit Complete

CABINET AND FRONT PANEL GROUP (Figure 4-1)

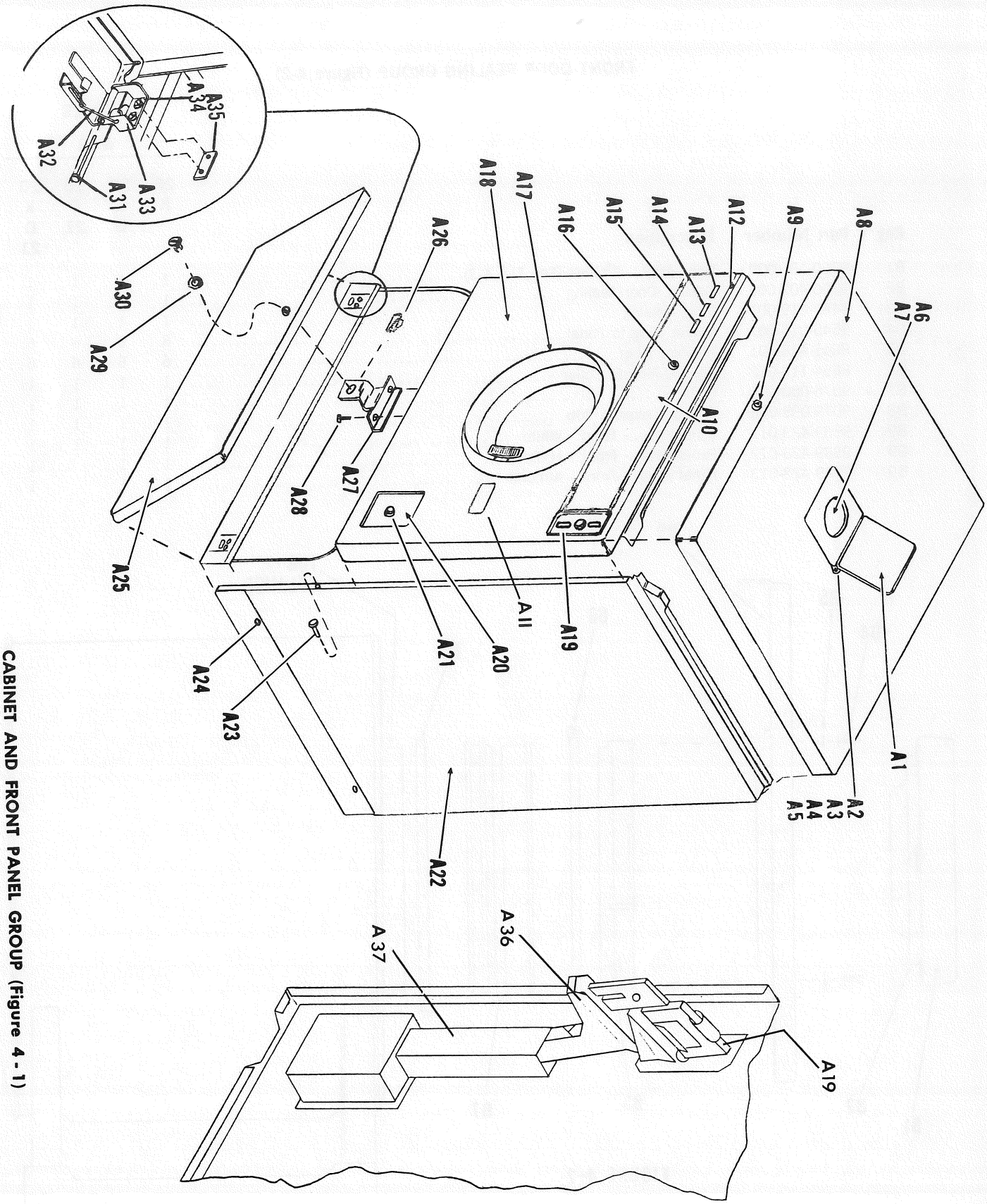
Key	Part Number	Description	MODELS WCA 20 K	20 K D	20 D 21	20 K D 21
A1	9960-250-001	Door Assy. - Soap (Brown)	1	1	1	1
*	9108-086-001	Door, Soap	1	1	1	1
*	9243-059-001	Hinge, Leaf	1	1	1	1
*	9545-011-001	Screw, Drive	2	2	2	2
A2	9545-010-006	Screw, Soap Door Mtg.	2	2	2	2
A3	8641-549-003	Washer, Soap Door Mtg.	2	2	2	2
A4	8641-436-001	Washer, Fiber	2	2	2	2
A5	8640-355-004	Nut - Hex Soap Door Mtg.	2	2	2	2
A6	9118-035-002	Diaphragm, Soap Door	1	1	1	1
A7	9082-025-001	Cup, Soap Door Diaphragm	1	1	1	1
A8	9989-121-007	Panel Assy. - Top - White	1	1	1	1
A8	9989-121-008	Panel Assy. - Top - H.G.	1	1		1
A8	9989-121-009	Panel Assy. - Top - Almond	1	1		1
*	9206-100-000	Gasket, Top Panel Silencer	2	2	2	2
A9	8650-019-001	Lock and Key, Top Panel	1	1	1	1
*	6292-006-003	Key Only (GR700) (For A9)	1	1	1	1
*	9206-393-001	Gasket, Lock - (For A9)	1	1	1	1
A10	9994-029-001	Escutcheon Assy. - (incl. nameplate)	1	1	1	1
A10	9412-067-001	Nameplate - only	1	1	1	1
A11	8502-598-001	Label, Warning	1	1	1	1
A12	9545-031-005	Screw, Escutcheon Mtg.	6	6	6	6
A13	3310-009-000	Light, Pilot - Red - 120V	1	1		
A13	3310-037-003	Light, Pilot - Red - 230V			1	1
A14	3310-010-000	Light, Pilot - Amber - 120V	1	1		
A14	3310-037-005	Light, Pilot - Amber - 230V			1	1
A15	3310-011-000	Light, Pilot - Clear - 120V	1	1		
A15	3310-037-004	Light, Pilot - Clear - 230V			1	1
A16	9539-449-001	Switch, Temp. (6-Way)	1	1	1	1
A16	9545-044-003	Screw, Temp. Switch Mtg.	1	1	1	1
A16	9307-090-002	Knob, Temp. Switch	1	1	1	1
A16	9545-028-006	Screw, Knob	1	1	1	1
A17	9960-185-009	Door Assy. - Clothes (Refer Fig. 4-3)	1	1	1	1
A18	9989-423-011	Panel Assy. - Front - White	1	1	1	1
A18	9989-423-012	Panel Assy. - Front - H.G.	1	1		1
A18	9989-423-013	Panel Assy. - Front - Almond	1	1		1
	8651-053-002	Button, Plug (Front Panel)	1	1	1	1
A19	9021-001-001	Acceptor, Coin - 25¢ w/coin blocking	1	1		
A19	9021-003-001	Acceptor, Coin - 25¢ w/o coin blocking	1	1	1	1
	9545-020-002	Screw, Acceptor Mtg.	4	4		4
	8640-355-002	Nut, Acceptor Mtg.	4	4		4
	9003-170-001	Angle, Top Panel Hold Down	1	1	1	1
	9545-008-005	Screw, Hold Down Mtg.	2	2	2	2
	8640-359-002	Nut, Top Panel Lock Receiver	1	1	1	1
A20	9041-074-001	Box Assy. - Coin	1	1	1	1
A20	9452-552-002	Plate, Coin Box Front - White	1	1	1	1
A20	9452-552-003	Plate, Coin Box Front - H.G.	1	1		1
A20	9452-552-004	Plate, Coin Box Front - Almond	1	1		1
A21	8650-018-003	Lock and Key, Coin Box	1	1	1	1

* Not Illustrated

CABINET AND FRONT PANEL GROUP (continued) (Figure 4-1)

Key	Part Number	Description	MODELS WCA 20 K	20 K D	20 D 21	20 K D 21
A22	9989-334-000	Panel Assy. - R.H. Side - White	1	1	1	1
A22	9989-335-009	Panel Assy. - R.H. Side - H.G.	1	1		1
A22	9989-335-016	Panel Assy. - R.H. Side - Almond	1	1		1
*	9989-335-000	Panel Assy. - L.H. Side - White	1	1	1	1
*	9989-335-010	Panel Assy. - L.H. Side - H.G.	1	1		1
*	9989-335-017	Panel Assy. - L.H. Side - Almond	1	1		1
A23	9051-021-000	Bumper, Serv. Door	2	2	2	2
A24	8641-342-000	Washer, Side Panel to Cradle	4	4	4	4
A24	9545-008-005	Screw, Side Panel to Cradle	4	4	4	4
*	9206-176-000	Gasket, Side Panel to Fr. Panel	6	6	6	6
*	9545-008-005	Screw, Side Panel to Fr. Panel	6	6	6	6
*	8023-118-000	Clip, Wire Harness - Side Panel	2	2	2	2
A25	9960-186-012	Door Assy. - Service - White	1	1	1	1
A25	9960-186-014	Door Assy. - Service - H.G.	1	1		1
A25	9960-186-017	Door Assy. - Service - Almond	1	1		1
A26	9492-008-001	Receptacle, Serv. Door Stud	1	1	1	1
A27	9039-985-002	Bracket, Serv. Door Stud	1	1	1	1
A28	9545-008-005	Screw, Serv. Door Brkt. Mtg.	2	2	2	2
*	8520-223-003	Nut, Spring (For A28)	2	2	2	2
A29	9209-084-001	Grommet, Serv. Door Stud	2	2	2	2
A30	9531-031-001	Stud, Serv. Door Latch	1	1	1	1
A31	9451-042-000	Pin, Serv. Door Hinge	2	2	2	2
A32	9341-028-000	Link, Serv. Door	2	2	2	2
A33	9039-120-000	Bracket, Serv. Door Hinge	2	2	2	2
A34	9545-045-002	Screw, Serv. Door Hinge Brkt.	4	4	4	4
A35	8520-123-000	Nut, Spring, Hinge Brkt.	2	2	2	2
A36	9940-012-001	Chute Assy. - Coin	1	1		1
*	9545-012-011	Screw, Chute to Hsg. Mtg.	2	2		2
A37	9574-235-003	Tube, Coin Vault	1	1		1
*	9545-008-006	Screw (For Item A36 and A37)	1	1		1
*	9454-451-002	Panel, Back	1	1	1	1
*	9545-008-005	Screw, Back Panel Mtg.	12	12	12	12

* Not Illustrated



CABINET AND FRONT PANEL GROUP (Figure 4 - 1)

FRONT DOOR SEALING GROUP (Figure 4-2)

Key	Part Number	Description	MODELS WCA 20 K	20 K D	20 D 21	20 K D 21
B1	9960-185-009	Door Assy. - Clothes (See Fig. 4-3)	1	1	1	1
B2	9206-402-001	Gasket, Door Sealing	1	1	1	1
B3	9487-219-001	Ring, Sealing	1	1	1	1
B4	9545-015-001	Screw, Ring to Panel	6	6	6	6
B5	8641-436-001	Washer, Fiber	6	6	6	6
B6	8654-117-012	Clamp, Ring to Collar	1	1	1	1
B7	9076-050-001	Collar	1	1	1	1
B8	9079-098-000	Clamp, Collar to Tub	1	1	1	1
B9	9989-423-011	Panel Assy. - Front - White	1	1	1	1
B9	9989-423-012	Panel Assy. - Front - H.G.	1	1		1
B9	9989-423-013	Panel Assy. - Front - Almond	1	1		1

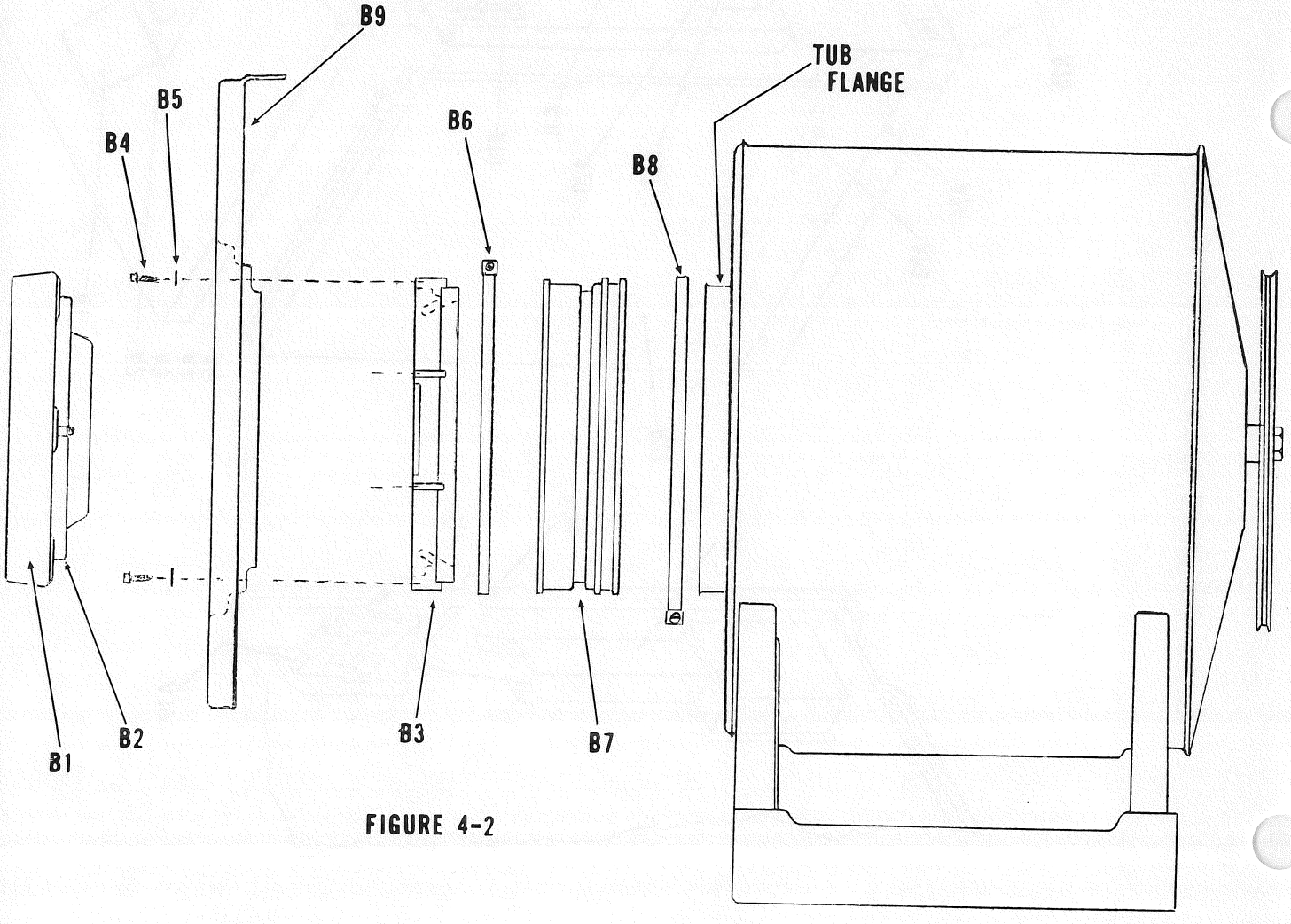
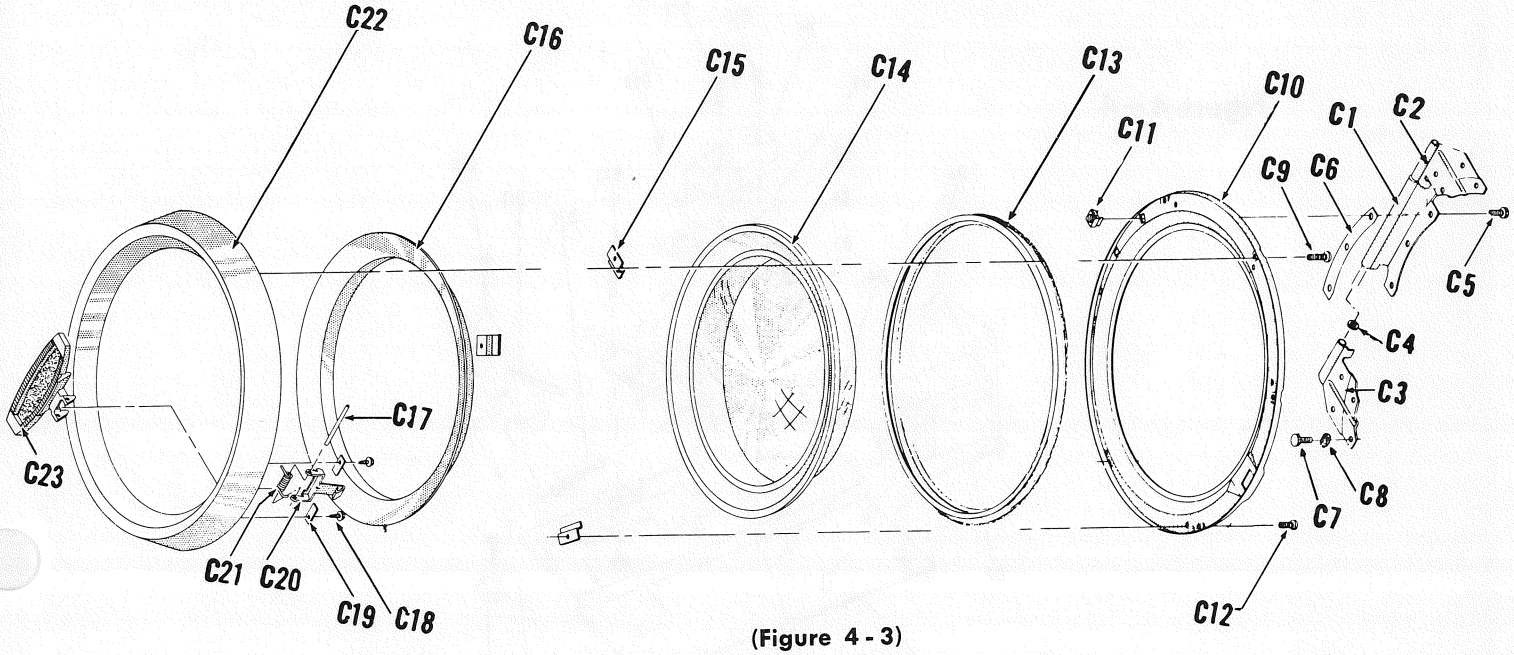


FIGURE 4-2

CLOTHES DOOR GROUP (Figure 4-3)

Key	Part Number	Description	MODELS WCA 20 K	20 K D	20 D 21	20 K D 21
*	9955-017-002	Hinge Assy. - Complete	1	1	1	1
C1	9845-004-001	Leaf and Pin Assy.	1	1	1	1
C2	9039-738-001	Bracket, Hinge - Upper	1	1	1	1
C3	9039-737-001	Bracket, Hinge - Lower	1	1	1	1
C4	9538-033-000	Spacer, Hinge	2	2	2	2
C5	9545-006-002	Screw, Hinge to Door	3	3	3	3
C6	9552-031-001	Shim, Door Hinge	AR	AR	AR	AR
C7	9545-006-003	Screw, Hinge to Front Panel	4	4	4	4
C8	8641-582-007	Lockwasher (For Item C7)	4	4	4	4
*	8640-414-002	Nut, Hex (For Item C7)	4	4	4	4
*	9455-007-000	Pad, Clothes Door Latch (On Fr. Panel)	1	1	1	1
*	9545-006-001	Screw, Latch Pad Mtg.	2	2	2	2
*	9960-185-009	Door Assy., Clothes - Complete	1	1	1	1
C9	8639-829-000	Screw, Spec.	6	6	6	6
C10	9454-260-007	Panel, Clothes Door	1	1	1	1
C11	8640-172-000	Nut Spring	3	3	3	3
C12	8639-827-000	Screw, Spec.	3	3	3	3
C13	9206-402-001	Gasket, Door Sealing	1	1	1	1
C14	9635-015-001	Window	1	1	1	1
C15	9486-026-001	Retainer, Window	3	3	3	3
C16	9276-060-004	Insert, Clothes Door (Brown)	1	1	1	1
C17	9451-156-001	Pin, Clothes Door Latch	1	1	1	1
C18	8639-547-000	Screw, Latch Pin Retain.	2	2	2	2
C19	9486-027-000	Retainer, Latch Pin	2	2	2	2
C20	9349-017-000	Latch, Clothes Door	1	1	1	1
C21	9534-066-000	Spring, Door Latch	1	1	1	1
C22	9487-055-000	Ring, Clothes Door - Chrome	1	1	1	1
C23	9244-075-002	Handle, Clothes Door	1	1	1	1

* Not Illustrated



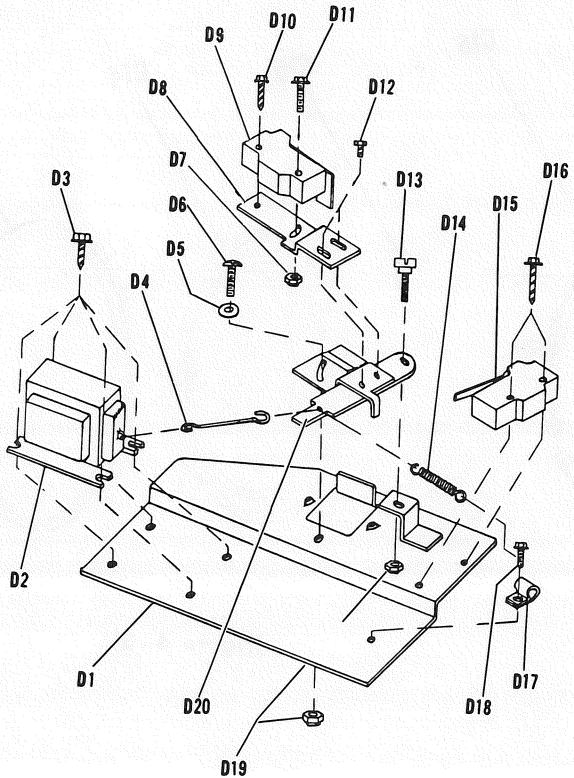
(Figure 4 - 3)

DOOR LOCK MECHANISM (Figure 4-4)

Key	Part Number	Description	MODELS WCA 20 K	20 K D	20 D 21	20 K D 21
*	9885-019-001	Lock Assy., Door - 120V - 60HZ - Comp. w/coin blocking	1	1		
*	9885-019-002	Lock Assy., Door - 230V - 50HZ - Comp. w/coin blocking			1	1
*	9885-019-003	Lock Assy., Door - 120V - 60HZ - Comp. w/o coin blocking	1	1		
*	9885-019-004	Lock Assy., Door - 230V - 50HZ - Comp. w/o coin blocking			1	1
D1	9982-276-002	Plate Assy. - Latch Mech.	1	1	1	1
D2	9536-078-001	Solenoid - 120V - 60HZ	1	1		
D2	9536-078-002	Solenoid - 230V - 50HZ			1	1
D3	9545-008-001	Screw, Solenoid Mtg.	4	4	4	4
*	8641-582-006	Lockwasher (with item D3)	4	4	4	4
D4	9341-042-001	Link, Sol. Latch	1	1	1	1
D5	8641-581-006	Washer (with item D6)	1	1	1	1
D6	9545-012-013	Screw, Latch Plate Mtg.	1	1	1	1
D7	8640-411-002	Nut, Elastic Stop (with item D11)	1	1	1	1
D8	9039-601-000	Bracket, Switch	1	1	1	1
D9	9539-446-004	Switch, Latching	1	1	1	1
*	9550-164-001	Shield, Insulator	1	1	1	1
D10	9545-031-006	Screw, Switch Mtg.	1	1	1	1
D11	9545-044-002	Screw, Switch Mtg.	1	1	1	1
D12	9545-031-003	Screw, Sw. Brkt. to Plate	2	2	2	2
D13	9451-098-000	Pin, Latch Pivot	1	1	1	1
D14	9534-350-001	Spring, Sol. Return	1	1	1	1
D15	9539-446-005	Switch, Door Lock Sensing	1	1	1	1
*	9550-164-001	Shield, Insulator	1	1	1	1
D16	9545-031-006	Screw, Switch Mtg.	2	2	2	2
D17	8654-125-001	Clamp, Plastic	1	1	1	1
D17	8654-125-002	Clamp, PLastic	2	2	2	2
D18	8639-547-000	Screw, (Items D14 and D17 to Plate)	1	1	1	1
D19	8640-413-004	Nut, Elastic Stop (with D6 and D13)	2	2	2	2
D20	9982-173-001	Bracket - Locking	1	1	1	1

* Not Illustrated

Figure 4—4



UPPER REAR CHANNEL COMPONENTS (Figure 4-5)

Key	Part Number	Description	MODELS WCA 20 K	20 K D	20 D 21	20 K D 21
F1	9039-421-001	Bracket, Inlet Trough Mtg.	1	1	1	1
F2	9575-026-001	Trough, Water Inlet	1	1	1	1
*	9413-030-001	Nozzle (For Item F1)	1	1	1	1
*	9545-031-005	Screw, Nozzle to Trough	2	2	2	2
*	9545-008-005	Screw, Trough and Bracket Mtg.	4	4	4	4
F3	8654-093-000	Clamp, Hose (For Item F2)	2	2	2	2
F4	9242-369-001	Hose, Water Valve to Trough	1	1	1	1
F5	9539-457-001	Switch, Pressure	1	1	1	1
*	9545-008-005	Screw, Press. Switch to Side Panel	2	2	2	2
F6	9379-175-001	Valve, Water - 120V - 60HZ (Ref. Fig. 5)	1	1		
F6	9379-175-003	Valve, Water - 230V - 50HZ (Ref. Fig.5)			1	1
F7	9545-008-008	Screw, Water Valve to Channel	2	2	2	2
F8	9081-052-001	Channel, Upper Rear	1	1	1	1
*	9802-037-007	Cord Service	1	1	1	1
*	8618-034-000	Strain Relief	1	1	1	1
*	8639-621-007	Screw, Terminal and Cord Eyelet	1	1	1	1
*	8652-130-037	Terminal, Ground Wire	1	1	1	1
*	9545-008-005	Screw, Rear Channel to Side Panel	4	4	4	4
*	9039-996-001	Bracket, Timer Mtg.	1	1	1	1
		Timer - See Fig. 4-13				
F9	8654-035-000	Clamp, Inlet Hose	1	1	1	1
F10	9242-368-001	Hose, Trough to Tub	1	1	1	1
*	9132-001-001	Dipstick, Oil Checking	1	1	1	1
*	9242-427-002	Hose, Filler Tube	1	1	1	1
*	9206-176-000	Gasket, Spacer (Sidepanels to Front)	6	6	6	6

* Not Illustrated

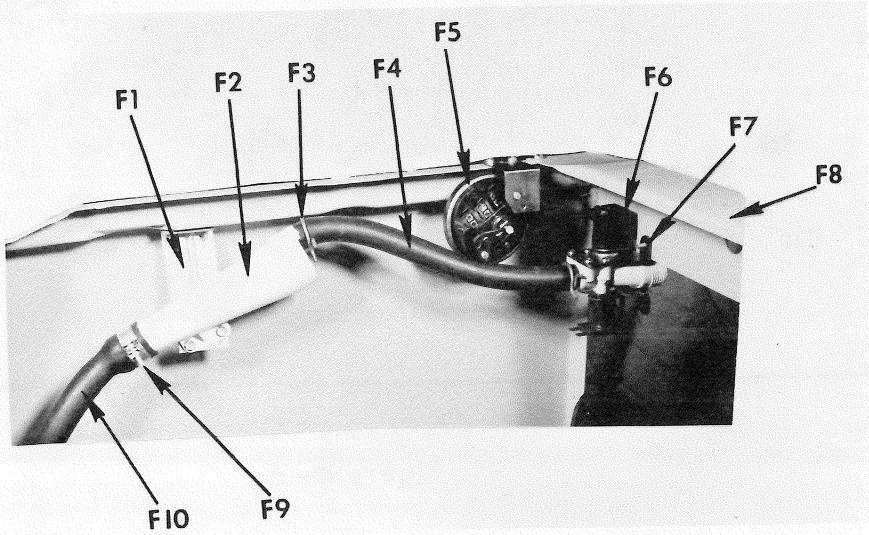


FIGURE 4 - 5

WATER INLET VALVE GROUP (Figure 4-6)

Key	Part Number	Description	MODELS WCA 20 K	20 K D	20 D 21	20 K D 21
G1	9379-175-001	Valve, Water Inlet - 120V - 50/60HZ	1	1		
G1	9379-175-003	Valve, Water Inlet - 230V - 50/60HZ			1	1
G2	9089-017-000	Coil - 120V	2	2		
G2	9089-035-002	Coil - 230V			2	2
G3	8639-827-000	Screw	10	10	10	10
G4	9211-021-002	Guide, Armature	2	2	2	2
G5	9534-298-001	Spring, Armature	2	2	2	2
G6	9015-008-001	Armature	2	2	2	2
G7	9118-049-001	Diaphragm	2	2	2	2
G8	9555-056-001	Screen	2	2	2	2
G9	9626-052-003	Washer, Flow	1	1	1	1
G10	9206-401-001	Plug, Flow	1	1	1	1

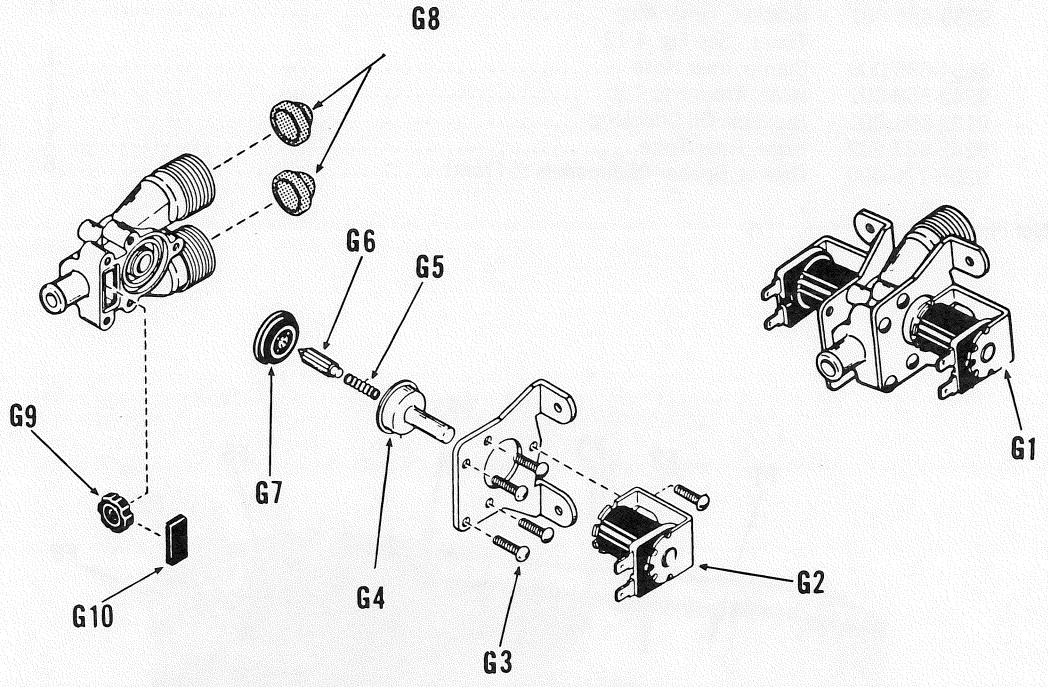
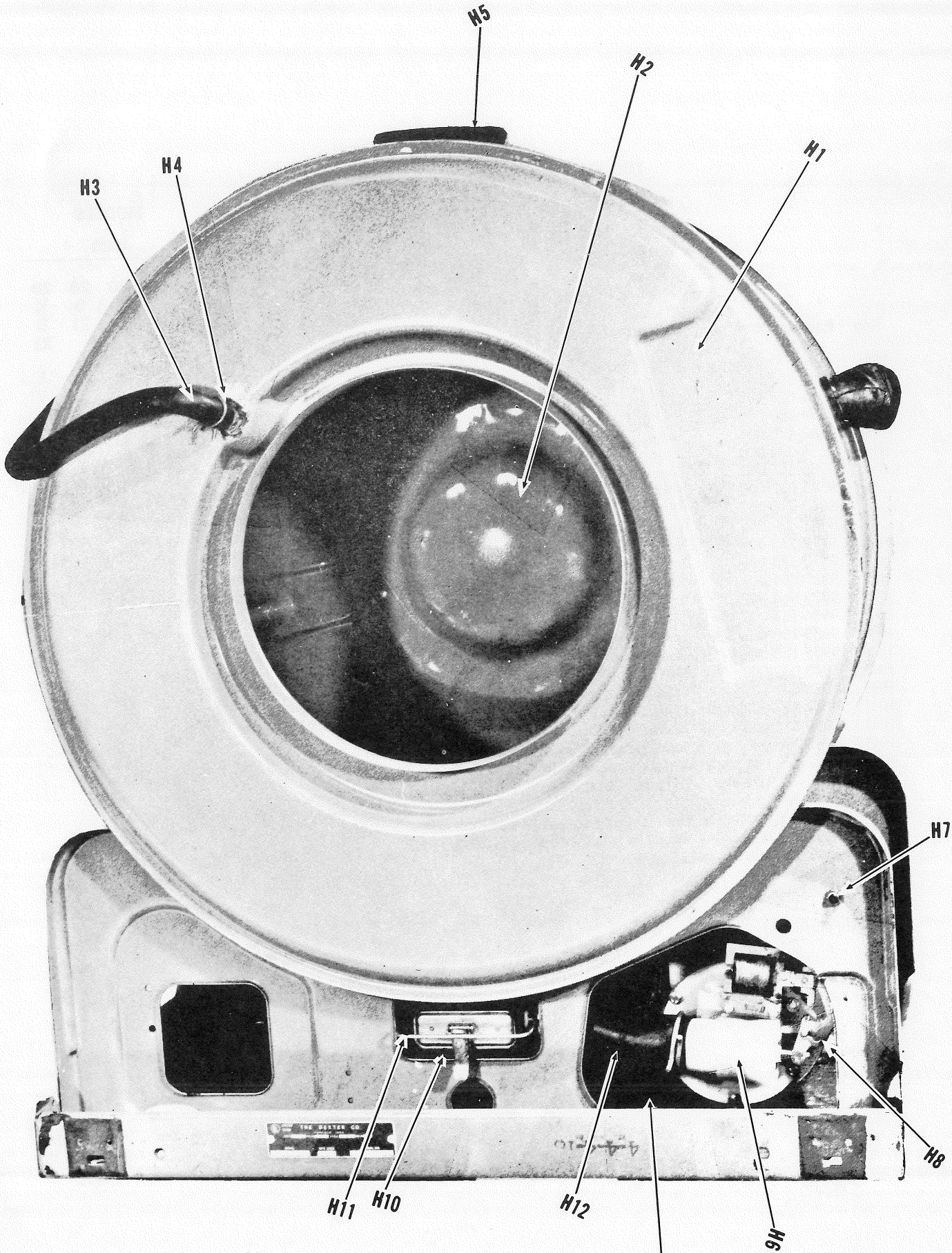


Figure 4—6

TUB, CRADLE AND DRAIN GROUP (Figure 4-7)

Key	Part Number	Description	MODELS WCA 20 K	20 K D	20 D 21	20 K D 21
H1	9930-095-007	Tub and Cradle Assy.	1	1	1	1
H2	9850-002-004	Cylinder Assy.	1	1	1	1
H3	9242-368-001	Hose, Trough to Tub	1	1	1	1
*	8654-035-000	Clamp, Hose - Trough End	1	1	1	1
H4	8654-093-000	Clamp, Hose - Tub End	1	1	1	1
H5	9118-035-002	Diaphragm, Soap Door	1	1	1	1
H6		Pump Assy. (Refer Figure 4-11)	1			
H7	5198-211-001	Circuit Breaker - 120V	1	1		
H7	5198-211-002	Circuit Breaker - 230V			1	1
H8	9902-141-006	Transmission - 120V - 60HZ (Ref. Fig. 4-10)	1			
H8	9902-143-008	Transmission - 120V - 60HZ (Ref. Fig. 4-10)		1		
H8	9902-143-009	Transmission - 230V - 50HZ (Ref. Fig. 4-10)			1	1
H9	9460-004-000	Pan, Base	1	1	1	1
*	9545-008-005	Screw, Base Pan Mtg.	4	4	4	4
H10	9822-008-003	Screen Assy. (On Pump Models Only)	1			
*	9965-006-000	Handle Assy., Screen	1			
*	9545-028-011	Screw, Handle Adjusting	1			
*	9451-169-005	Rivet	1			
*	9206-138-000	Gasket, Screen Sealing	1			
H11	9063-002-000	Bail, Drain Screen Latching	1			
*	9241-159-001	Housing, Drain (Pump)	1			
*	9241-159-002	Housing, Drain (Dump)		1	1	1
*	9206-086-000	Gasket, Drain Housing	1	1	1	1
H12	9242-344-001	Hose, Housing to Pump	1			
*	9456-039-001	Plug, Cap (For 9241-159-1 Only)	1			
*	9079-039-000	Clamp, Cap Plug and Pump Hose	2			
*	9079-044-000	Clamp, Pump Hose to Pump	1			
*	8654-029-000	Clamp, Drain Hose to Pump Outlet	1			
*	8639-424-000	Screw, Dr. Housing Mtg.	8	8	8	8
*	8641-222-000	Washer, Rubber - Dr. Housing Mtg.	8	8	8	8
*	8640-413-001	Nut, Dr. Housing Mtg.	8	8	8	8
*	9242-425-001	Hose, Hsg. to Dump Valve		1	1	1
*	8654-117-008	Clamp, Hose to Dump Valve		1	1	1
*	8654-117-011	Clamp, Hose to Dr. Housing		1	1	1

* Not Illustrated

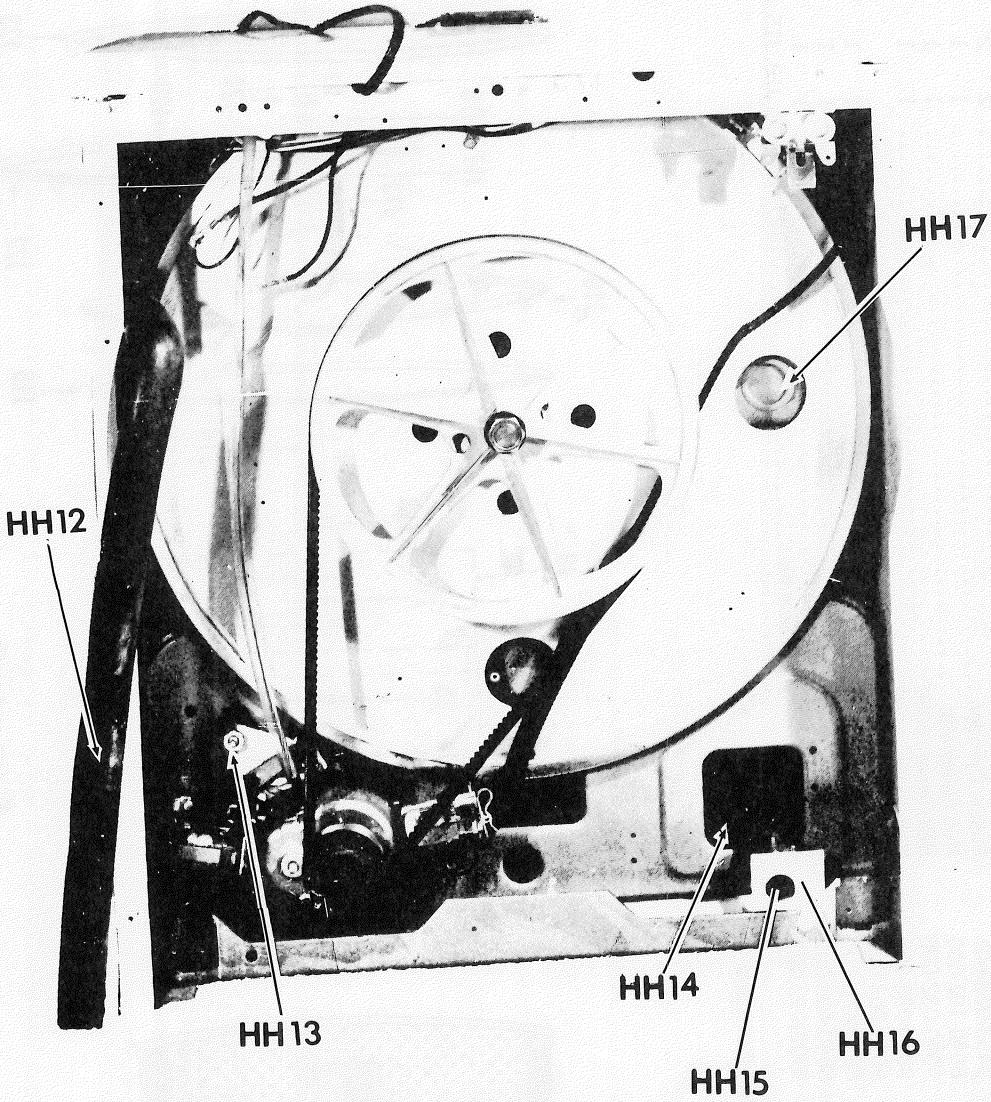


(Figure 4 - 7)

TUB, CRADLE AND DRAIN GROUP (Figure 4-8)

Key	Part Number	Description	MODELS WCA 20 K	20 K D	20 D 21	20 K D 21
HH1	9242-175-000	Hose, Pressure Switch	1	1	1	1
HH2	8654-059-000	Clamp, Press. Sw. Hose Ret.	1	1	1	1
HH2	9545-008-005	Screw, Clamp	1	1	1	1
*	8654-059-000	Clamp, Press. Sw. Hose to Hsg.	1	1	1	1
HH3	9242-426-001	Hose, Overflow (Dump Models Only)		1	1	1
HH4	8654-034-000	Clamp, Overflow Hose to Valve		1	1	1
HH5	9985-157-001	Bracket, Dump Valve Mtg.		1	1	1
*	9545-012-005	Screw, Valve and Brkt. Mtg.		2	2	2
*	8640-413-001	Nut, Valve and Brkt. Mtg.		4	4	4
*	8641-582-006	Lockwasher, Valve and Brkt. Mtg.		4	4	4
HH6	9379-173-007	Valve, Dump - N.O. - 120V - 60HZ (Ref. Fig. 4-12)		1		
HH6	9379-173-009	Valve, Dump - N.O. - 230V - 50HZ (Ref. Fig. 4-12)			1	1
HH7	9985-064-001	Spin Sol. Assy. - Interm. - 120V (Ref. Fig. 4-10)	1	1		
HH7	9985-064-002	Spin Sol. Assy. - Interm. - 230V (Ref. Fig. 4-10)			1	1
HH8	9534-151-000	Spring, Belt Tension	1	1	1	1
HH9	9985-155-003	Spin Sol. Assy. - Hi-Spd. - 120V (Ref. Fig. 4-10)	1	1		
HH9	9985-155-004	Spin Sol. Assy. - Hi-Spd. - 230V (Ref. Fig. 4-10)			1	1
HH10	9040-032-000	Belt, Cog-Drive	1	1	1	1
HH11	9132-001-001	Dipstick, Oil Checking	1	1	1	1
HH11	9242-427-002	Hose, Filler Tube	1	1	1	1
HH12	9990-012-000	Hose, Overflow (Pump Models Only)	1			
HH13	9895-006-000	Stud, Trans. Mounting	2	2	2	2
HH14	9242-429-001	Hose, Pump Outlet (to coupling)	1			
HH15	9088-032-001	Coupling, Pump Hose	1			
HH16	9039-989-001	Bracket, Coupling	1			
*	9242-428-001	Hose, Discharge (Coupling to External)	1			
*	8654-029-001	Clamp, Hoses (At Coupling)	2			
*	9545-008-005	Screw, Brkt. to Cradle	1			
	8641-581-006	Washer	1			
HH17	9456-042-001	Plug, Cap	1	1	1	1

* Not Illustrated


HH17
HH12
HH13
HH14
HH15
HH16

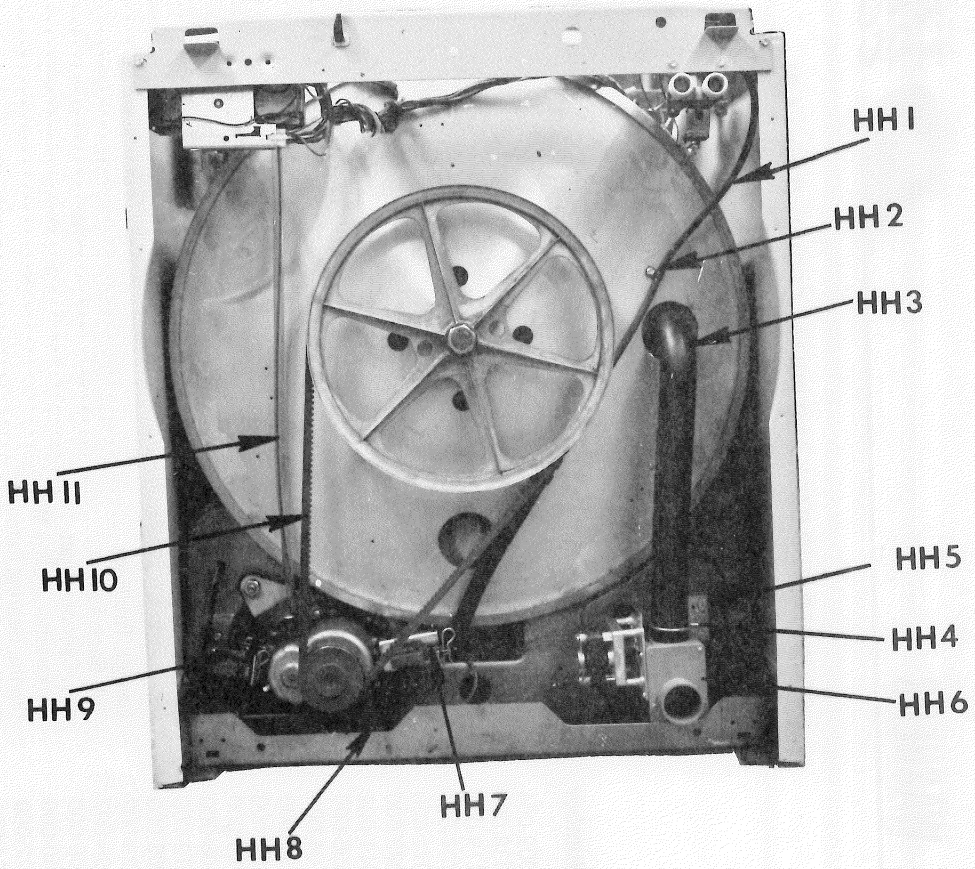

HH1
HH2
HH3
HH11
HH10
HH5
HH4
HH9
HH6
HH7
HH8

FIGURE 4 - 8

CYLINDER, TUB BACK AND PULLEY GROUP (Figure 4-9)

Key	Part Number	Description	MODELS WCA 20 K	20 K D	20 D 21	20 K D 21
J1	9850-002-004	Cylinder Assy.	1	1	1	1
J2	9537-038-000	Shaft, Cylinder	1	1	1	1
J3	9702-119-000	Seal Kit - (Incl. J4, 5, 6, 7 & 8)	1	1	1	1
J4	8639-704-001	Screw, Seal Hsg.	6	6	6	6
J5	9206-071-000	Gasket, Seal Hsg.	1	1	1	1
J6	9206-072-000	Gasket, Seal Mating Ring	1	1	1	1
J7	9180-011-001	Mating Ring (Ring Only)	(Part of Seal Assy. 9276-056)			
J8	9276-056-000	Seal, Main	1	1	1	1
J8	9241-104-000	Housing, Seal	1	1	1	1
J9	9702-112-000	Tub Back Seal Kit - (Incl. J10, 11, & 12)	1	1	1	1
J10	9206-294-000	Gasket, Cyl. Shaft - (Copper)	1	1	1	1
J11	9532-085-000	Seal, Tub Back - (Lip Seal)	1	1	1	1
J12	9538-108-000	Spacer, Cyl. Shaft	1	1	1	1
J13	9037-012-000	Bearing, Ball - Tub Back	2	2	2	2
J14	9538-106-000	Spacer, Bearing	1	1	1	1
J15	9206-229-002	Gasket, Tub Back	1	1	1	1
J16	9982-196-007	Tub Back Assy.	1	1	1	1
J17	9306-006-000	Key, Cylinder Shaft	1	1	1	1
J18	8641-240-000	Lockwasher, Pulley Mtg.	1	1	1	1
J19	9079-022-000	Clamp, Bearing Retainer	2	2	2	2
*	8639-704-001	Screw, Clamp Mtg.	2	2	2	2
J20	9453-028-001	Pulley, Cylinder	1	1	1	1
J21	8640-167-000	Nut, Pulley Mtg.	1	1	1	1
J22	9040-032-000	Belt, Drive - 60HZ	1	1		
J22	9040-038-000	Belt, Drive - 50HZ			1	1
J23	9859-003-002	Clamp, Tub Back	1	1	1	1
J24	8639-426-000	Screw, Clamp Ring	1	1	1	1
J25	8640-400-001	Nut, Clamp Ring	1	1	1	1
*	9702-092-001	Tub Back Bearing and Seal Kit	(Incl. items J3, J13, J15, and J17)			

* Not Illustrated

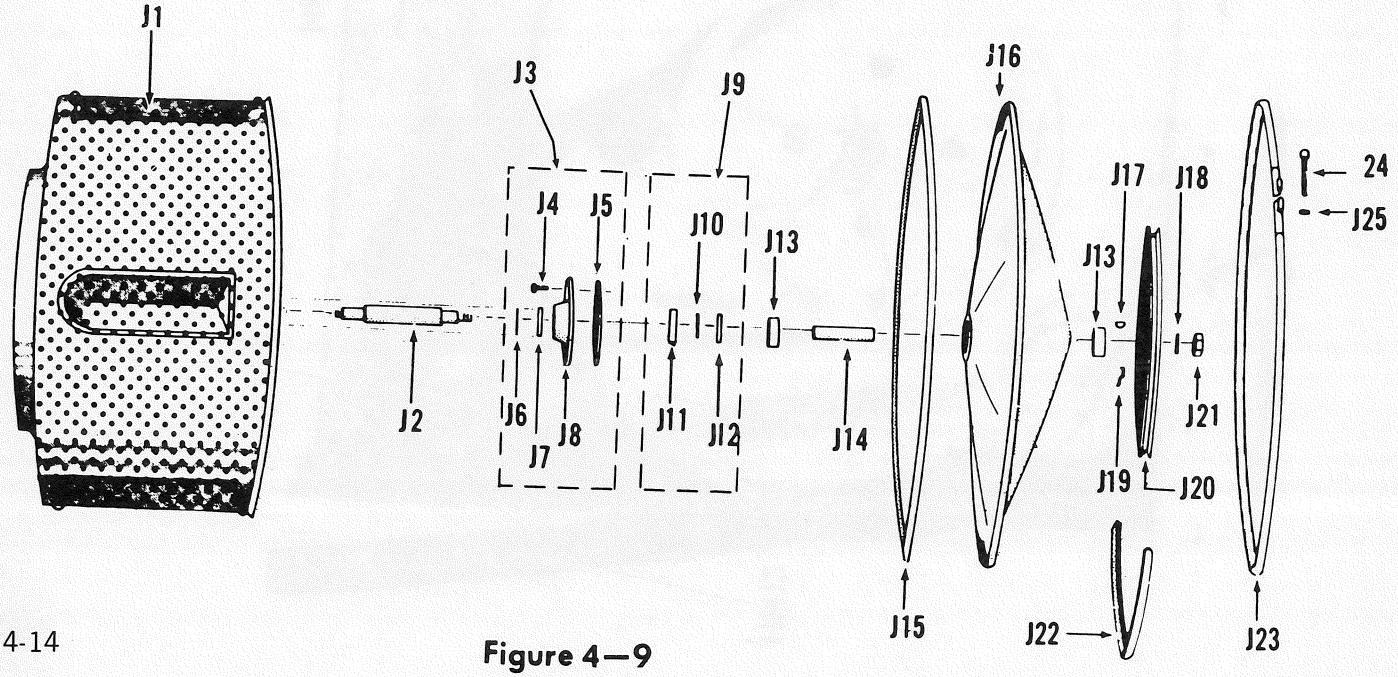


Figure 4—9

MOTOR AND TRANSMISSION GROUP (Figure 4-10)

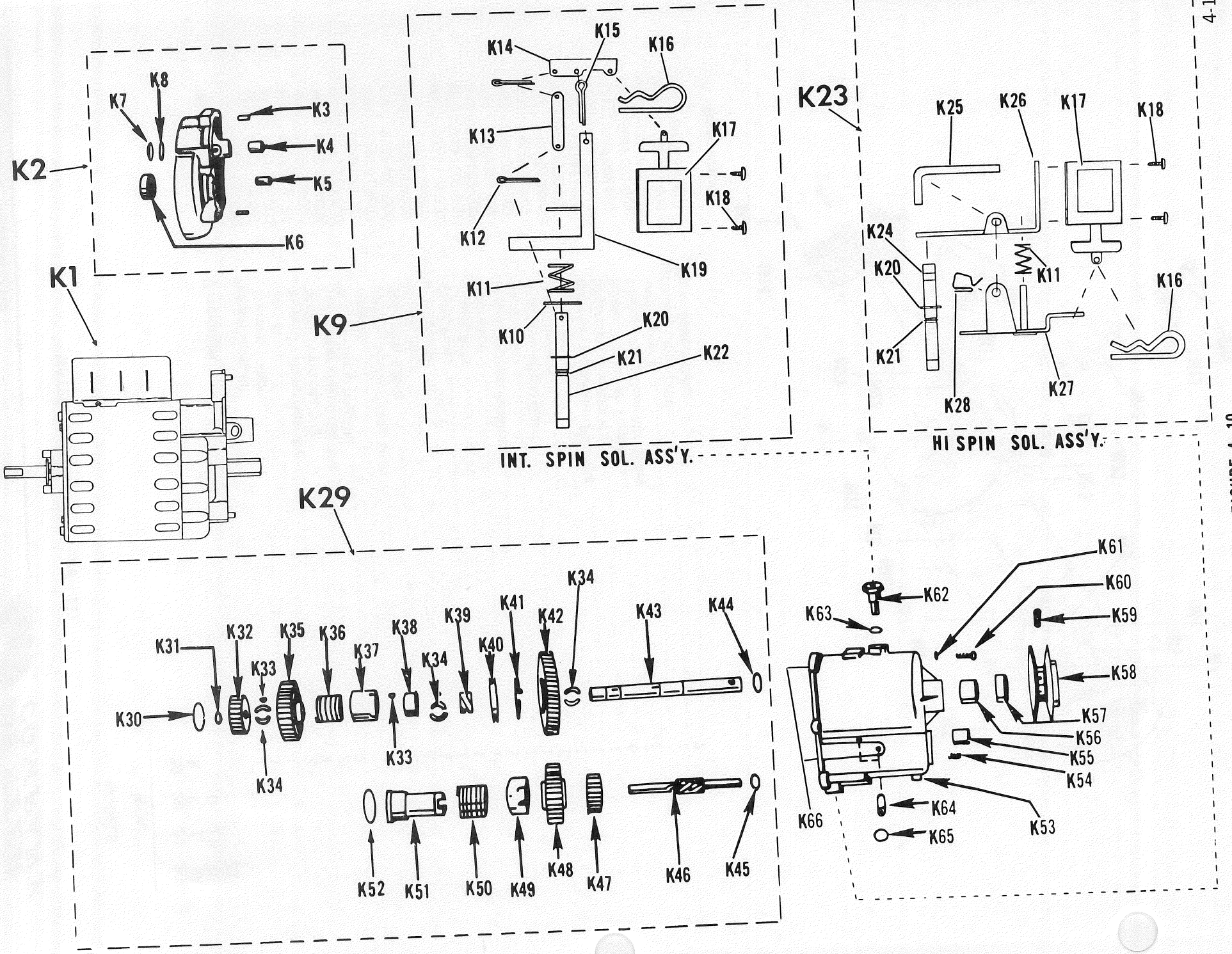
Key	Part Number	Description	MODELS WCA 20 K	20 K D	20 D 21	20 K D 21
*	9902-141-006	Transmission Assy. - 120V - 60HZ	1			
*	9902-143-008	Transmission Assy. - 120V - 60HZ		1		
*	9902-143-009	Transmission Assy. - 230V - 50HZ			1	1
K1	9914-107-010	Motor and End Bell - 120V - 60HZ	1	1		
K1	9914-107-012	Motor and End Bell - 230V - 50HZ			1	1
K2	9879-032-001	End Bell Assy.	1	1	1	1
K3	8688-003-000	Pin, Dowel	2	2	2	2
K4	9036-042-000	Bearing, Jack Shaft	1	1	1	1
K5	9053-012-000	Bushing, Motor Shaft	1	1	1	1
K6	9532-016-000	Seal, Oil - Motor Shaft	1	1	1	1
K7	9456-046-001	Plug, Welsh	1	1	1	1
K8	9206-073-000	Gasket, Welsh Plug	1	1		
K9	9985-064-001	Spin Sol. Assy. - Interm. (120V)			1	1
K9	9985-064-002	Spin Sol. Assy. - Interm. (230V)	1	1	1	1
K10	8641-262-000	Washer, Shifter Return Spg.	2	2	2	2
K11	9534-346-001	Spring, Shifter Return	2	2	2	2
K12	9451-169-005	Pin, Cotter - Link	1	1	1	1
K13	9341-023-000	Link	1	1	1	1
K14	9001-022-000	Arm, Rocker	1	1	1	1
K15	9451-169-006	Pin, Cotter - Arm to Brkt.	2	2	2	2
K16	9083-107-001	Clip, Hairpin - Sol.	2	2		
K17	9536-007-000	Solenoid, Shifter - 120V			2	2
K17	9536-043-000	Solenoid, Shifter - 240V	4	4	4	4
K18	9545-031-008	Screw, Sol. Mtg. (2 ea. assy.)	1	1	1	1
K19	9039-297-000	Bracket, Interm. Assy.	2	2	2	2
K20	8649-031-000	Ring, Snap - Rod	2	2	2	2
K21	9487-026-000	Ring "O" - Rod	1	1	1	1
K22	9497-007-000	Rod, Shifter, Interm.	2	2	2	2
*	9545-012-012	Screw, Interm. Spin Assy. to Hsg.	1	1		
K23	9985-155-003	Spin Sol. Assy. - Hi-Spd. (120V)			1	1
K23	9985-155-004	Spin Sol. Assy. - Hi-Spd. (230V)	1	1	1	1
K24	9497-051-001	Rod, Shifter, Hi-Spd.	1	1	1	1
K25	9451-166-001	Pin, Pivot	1	1	1	1
K26	9348-064-001	Lever, Shifter - Sol. Mtg.	1	1	1	1
K27	9985-156-001	Bracket Assy. - Hi-Spd.	1	1	1	1
K28	8023-118-000	Clip, Pivot Pin	2	2	2	2
*	9545-012-001	Screw, Hi-Spd. Assy. to Hsg.	1	1	1	1
K29	9904-027-000	Gear Set Assy. - 3 speed	1	1	1	1
K30	8641-270-000	Washer, Thrust - Jack Shaft	1	1	1	1
K31	9487-014-000	Ring, Snap - Jack Shaft	1	1	1	1
K32	9207-043-000	Gear, Jack Shaft (39 teeth)	4	4	4	4
K33	9306-007-002	Key, Woodruff	6	6	6	6
K34	8641-228-000	Washer, "C" - Jack Shaft	1	1	1	1
K35	9904-005-000	Gear Assy. - Jack Shaft	1	1	1	1
K36	9534-080-000	Spring, Drive - L.H. Jack Shaft	1	1	1	1
K37	9535-018-000	Sleeve, Drive	1	1	1	1
K38	9053-018-000	Bushing, Jack Shaft				

* Not Illustrated

MOTOR AND TRANSMISSION GROUP (continued) (Figure 4-10)

Key	Part Number	Description	MODELS WCA 20 K	20 K D	20 D 21	20 K D 21
K39	8639-423-002	Screw, Clutch Thread	1	1	1	1
K40	9583-001-000	Thread, Clutch	1	1	1	1
K41	9534-079-000	Spring, Clutch Drag	1	1	1	1
K42	9980-002-001	Gear Assy.	1	1	1	1
K43	9537-041-000	Shaft, Jack	1	1	1	1
K44	8641-224-000	Washer, Thrust - Jack Shaft	1	1	1	1
K45	8641-231-000	Washer, Thrust - Drive Pinion	1	1	1	1
K46	9207-044-000	Pinion, Drive Shaft	1	1	1	1
*	9487-083-000	Ring, Ret. - Drive Gears	1	1	1	1
K47	9207-041-000	Gear, Drive (29 teeth)	1	1	1	1
K48	9904-025-000	Gear Assy. - Drive	1	1	1	1
K49	9535-029-000	Sleeve, Drive	1	1	1	1
K50	9534-149-000	Spring, Drive - R.H. - Drive Shaft	1	1	1	1
K51	9537-066-000	Shaft, Drive	1	1	1	1
K52	8641-269-000	Washer, Thrust - Drive Shaft	1	1	1	1
K53	9803-009-001	Housing Assy. - Transmission	1	1	1	1
K54	8615-104-032	Plug, Pipe	1	1	1	1
K55	9036-043-000	Bearing, Drive Shaft	1	1	1	1
K56	9036-042-000	Bearing, Jack Shaft	1	1	1	1
K57	9532-106-001	Seal Oil - Jack Shaft	1	1	1	1
K58	9453-033-000	Pulley, Drive - 60HZ	1	1		
K58	9453-075-000	Pulley, Drive - 50HZ			1	1
K59	9545-028-013	Screw, Set - Drive Pulley	2	2	2	2
K60	9545-047-001	Screw, Hsg. Mtg. (¾" Long)	5	5	5	5
K60	9545-047-002	Screw, Hsg. Mtg. (⅞" Long)	1	1	1	1
K61	8641-582-011	Lockwasher, Hsg. Mtg.	6	6	6	6
K62	9535-019-000	Sleeve, Shifter Rod - Interm.	1	1	1	1
K63	9206-097-000	Gasket, Sleeve - Shifter Rod	1	1	1	1
K64	9458-002-000	Pipe, Vent and Oil Checking	2	2	2	2
K65	8651-023-000	Button, Plug - Vent Pipe	1	1	1	1
K66	Purch. Locally	Sealant, Housing to End Bell				
*	9039-696-000	Bracket, Motor Support Rear	1	1	1	1
*	9039-988-001	Bracket, Motor Support Front	1	1		
*	9039-984-001	Bracket, Motor Support Front			1	1
*	9895-006-000	Stud Assy. - Trans. Mtg.	2	2	2	2
*	8641-582-013	Lockwasher (For 9895-006)	4	4	4	4
*	8640-416-001	Nut (For 9895-006)	4	4	4	4
*	8641-340-000	Washer, Spacer - Trans. Mtg.	1	1	1	1
*	9545-006-001	Screw, Motor Mtg. (2-front, 1-rear)	3	3	3	3

* Not Illustrated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INT. SPIN SOL. ASS'Y.
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HI SPIN SOL. ASS'Y.
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FIGURE 4-10

WATER PUMP GROUP (Figure 4-11)

Key	Part Number	Description	MODELS WCA 20 K	20 K D	20 D 21	20 K D 21
*	9702-134-000	Pump Housing Kit				
M1	9241-108-000	Housing, Pump	1			
M2	9532-094-001	Seal, Pump	1			
M3	9487-018-000	Ring, "O" - Pump Hsg. Mtg.	1			
M4	8639-535-000	Screw - Pump Hsg. Mtg.	2			
M5	8641-582-008	Lockwasher - Pump Hsg. Mtg.	2			
M6	8641-233-000	Washer - Pump Hsg. Mtg.	2			
M7	9278-025-001	Impeller	2			
M8	9545-012-007	Screw - Impeller To Mtr. Shaft	1			
M9	9532-083-000	Seal - Mating Ring	1			
M10	9206-214-000	Gasket, Pump	1			
*	9702-133-000	Pump Cover Kit	1			
M11	9074-176-000	Cover, Pump	1			
M12	9890-002-000	Plunger Assy.	1			
M13	9118-007-002	Diaphragm	1			
M14	9487-027-000	Ring, Diaphragm Retaining	1			
M15	9213-003-000	Gland, Pump	1			
M16	9487-191-001	Ring, Snap - Pump Gland	1			
M17	9464-019-000	Pivot, Rocker Arm	1			
M18	9534-082-000	Spring, Rocker Arm	1			
M19	8640-413-001	Nut, Hex - Rocker Arm Pivot Mtg.	1			
M20	8641-582-010	Lockwasher (For Item M19)	1			
M21	9545-008-007	Screw - Pump Cover To Hsg.	1			
M22	8641-581-004	Washer - Pump Cover Mtg. Screw	6			
M23	9001-015-000	Arm, Rocker	2			
M24	9536-037-000	Solenoid, Pump - 120V	1			
M25	8639-859-001	Screw - Solenoid Mtg.	2			

* Not Illustrated

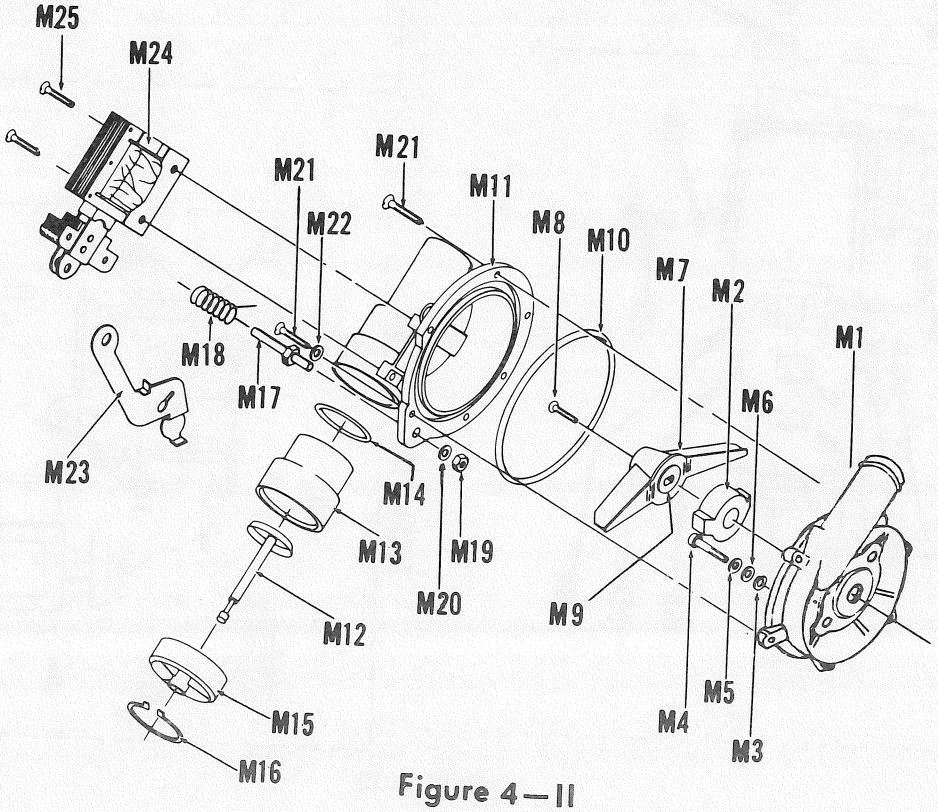


Figure 4—11

GRAVITY DRAIN VALVE GROUP (Figure 4-12)

Key	Part Number	Description	MODELS WCA 20 K	20 K D	20 D 21	20 K D 21
N1	9379-173-007	Valve Assy. - N.O. - 120V - 60HZ - St. Stl.		1		
N1	9379-173-009	Valve Assy. - N.O. - 230V - 50-60HZ - St. Stl.			1	1
N2	9914-137-001	Motor and Gear Assy. - 120V - 60HZ		1		
N2	9914-137-005	Motor and Gear Assy. - 230V - 50-60HZ			1	1
N3	9064-062-002	Body Assy. (Includes Items N4 and N5)		1	1	1
N4	9545-013-001	Screw, Valve Body		4	4	4
N5	9206-397-001	Gasket, Valve Body		1	1	1
N6	9451-157-002	Pin, Hinge		1	1	1
N7	9452-538-001	Plate, Motor Mtg.		1	1	1
N8	9982-272-003	Plate Assy., Sealing		1	1	1
N9	9532-134-001	Seal, Hinge Pin		1	1	1
N10	8639-994-001	Screw, Motor to Plate		4	4	4
N11	8639-995-001	Screw, Plate to Hinge		2	2	2
N12	8639-997-002	Screw, Motor Plate to Valve		3	3	3
N13	9538-149-001	Spacer, Mtg. Plate		4	4	4
N14	9534-339-001	Spring, Drive		1	1	1
N15	9534-343-001	Spring, Bumper		1	1	1

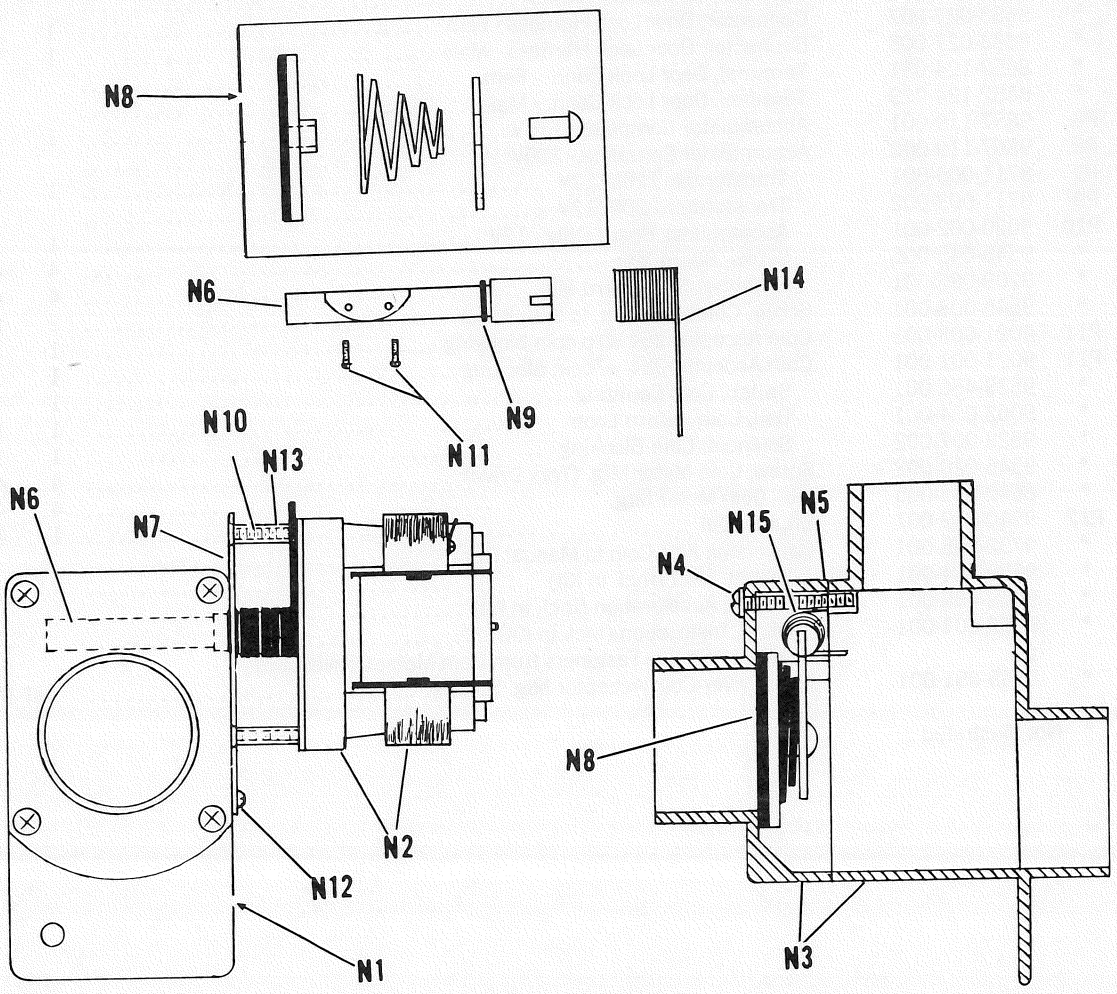
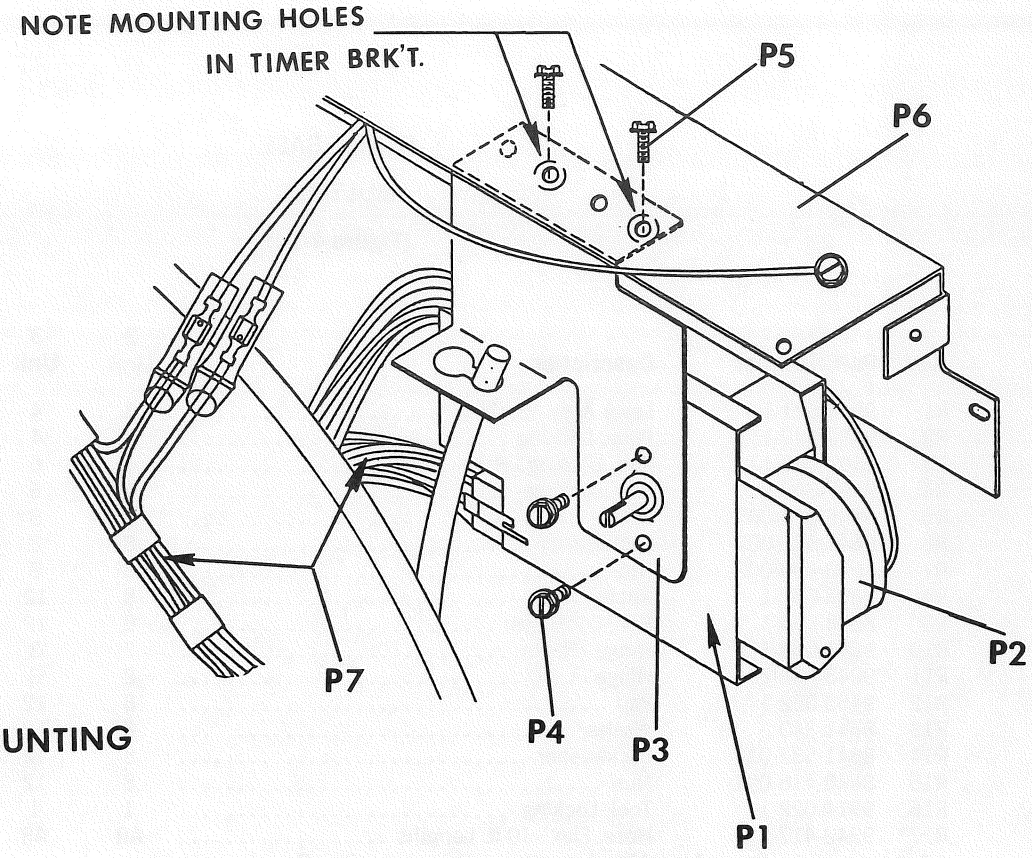


Figure 4—12

TIMER GROUP (Figure 4-13)

Key	Part Number	Description	MODELS WCA 20 K	20 K D	20 D 21	20 K D 21
P1	9571-351-001	Timer, 120V 60 Cy	1	1		
P1	9571-351-002	Timer, 220V 50 Cy			1	1
P2	9376-286-002	Motor, Timer - Rapid Advance - 120V	1	1		
P2	9376-286-001	Motor, Timer - Rapid Advance - 220V			1	1
P2A	9376-285-002	Motor, Timer - Drive - 120V	1	1		
P2A	9376-285-001	Motor, Timer - Drive - 220V			1	1
*	9207-096-001	Gear, Idler - 33 tooth	1	1	1	1
*	9531-032-001	Stud, Idler	1	1	1	1
P3	9039-996-001	Bracket, Timer Mounting	1	1	1	1
P4	9545-012-001	Screw, Timer to Brkt.	2	2	2	2
P5	9545-008-005	Screw, Timer Brkt. to Channel	2	2	2	2
P6	9081-052-001	Channel, Back Support	1	1	1	1
P7	9627-641-001	Harness, Main Wiring	1	1	1	1
*	9627-642-001	Harness, Door Lock	1	1	1	1
*	8683-027-010	Connector, Timer Harness - Black	1	1	1	1
*	8683-027-009	Connector, Timer Harness - White	1	1	1	1
*	8652-124-033	Terminal, Connector - Timer				
*	8683-027-007	Connector, Door Lock Harness - Fem.	1	1	1	1
*	8683-027-008	Connector, Door Lock Harness - Male	1	1	1	1
*	8652-124-031	Terminal, Door Lock Conn. - Fem.				
*	8652-124-029	Terminal, Door Lock Conn. - Male				
P8	9857-119-001	Accumulator Complete - 115V	1	1		
P8	9857-119-002	Accumulator Complete - 220V			1	1
P9	8711-003-001	Transformer 120V/12V	1	1		
P9	8711-003-002	Transformer 220V/12V			1	1
P10	9020-002-001	Accumulator Board Only - 12V	1	1	1	1
*	9545-045-006	Screw, Board Mtg.	4	4	4	4
*	9209-085-001	Grommet-Nut, Board Mtg.	4	4	4	4
*	9545-008-001	Screw, Comp. Accum. to Side Panel	2	2	2	2
P11	9021-003-001	Coin Acceptor-25¢ w/o coin blocking	1	1		
P11	9021-001-001	Coin Acceptor-25¢ w/coin blocking	1	1		
*	9539-466-001	Switch, Coin Counting	1	1		
*	9063-004-001	Bail, Coin Return Loop	1	1		
*	9922-007-002	Solenoid, Coin Blocking	1	1		
*	9545-020-002	Screw, Coin Meter Mtg. (Torx Drive)	4	4		
*	8640-355-005	Nut, Coin Meter Mtg.	4	4		
P12	9940-012-001	Chute, Coin	1	1		
*	9732-055-001	Conversion Kit - Coin to Manual Opr.				
*	9539-464-001	Switch, Start (Incl. in Kit)				
*	9539-465-001	Switch, Acceleration (Incl. in Kit)				
*	8502-604-001	Decal, Instruction (Incl. in Kit)				
		(Note: Re-use Fasteners from Coin Meter Conversion)				
*	8545-051-001	Tool, Driver-Coin Acceptor Mtg. Screws	(T-9 Torx Drive)			

* Not Illustrated



TIMER MOUNTING

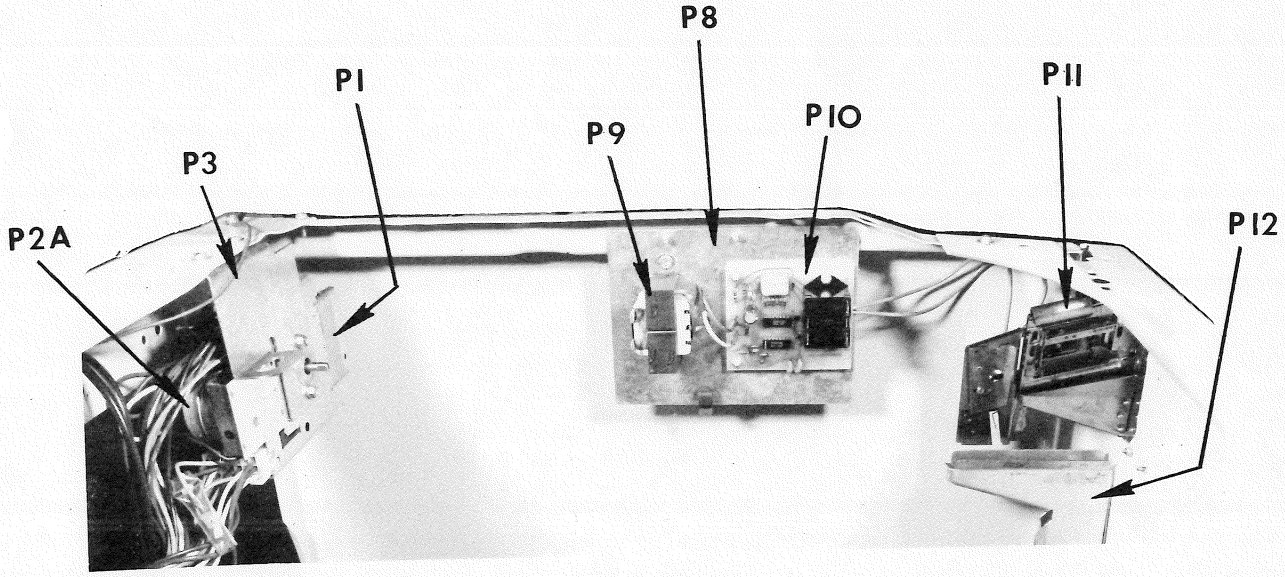


FIGURE 4 - 13

HI-RISE BASE

MULTIPLE

(Figure 4-14)

Key	Part Number	Description	MODELS 2 Unit	3 Unit	4 Unit	5 Unit	6 Unit
R1	9814-021-1	Lever Assy., Locking	3	4	5	6	7
R2	9452-549-1	Plate, Locking	3	4	5	6	7
R3	9497-049-1	Rod, Locking - R. H.	4	6	8	10	12
R4	9497-049-2	Rod, Locking - L. H.	4	6	8	10	12
R5	9545-014-005	Screw	6	8	10	12	14
R6	8641-582-002	Lockwasher	6	8	10	12	14
R7	8640-400-002	Nut	6	8	10	12	14
R8	9896-001-1	Anchor Assy.	8	12	16	20	24
R9	8508-003-1	Bolt, Lockdown	8	12	16	20	24
R10	9243-058-1	Hinge - R. H.	2	3	4	5	6
R11	9243-058-2	Hinge - L. H.	2	3	4	5	6
R12	9455-052-1	Pad	8	12	16	20	24
R13	8641-340	Washer	8	12	16	20	24
R14	8641-582-013	Lockwasher	8	12	16	20	24
R15	8640-416-001	Nut	8	12	16	20	24
R16	9814-022-1	Tool, Locking	1	1	1	1	1
R17*	9242-417-1	Hose, Flex - 10 ft. Lengths	AR	AR	AR	AR	AR

* Accessory for Dump Model Washers (Dump Valve to Hi-Rise Base.)

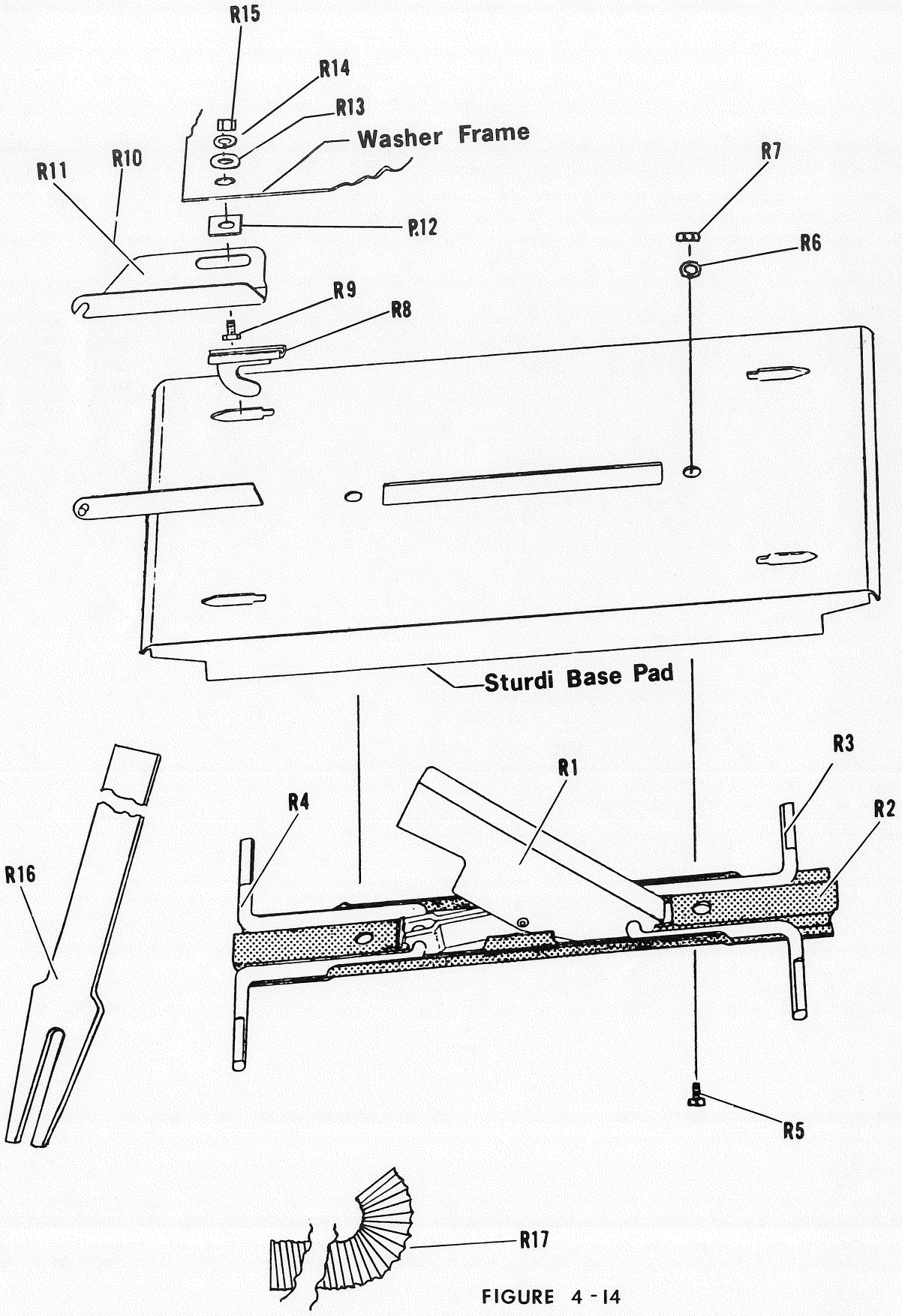

R15
R14
R13
Washer Frame
R11
R10
R7
P.12
R6
R9
R8
Sturdi Base Pad
R3
R1
R4
R2
R16
R5
R17

FIGURE 4 - 14