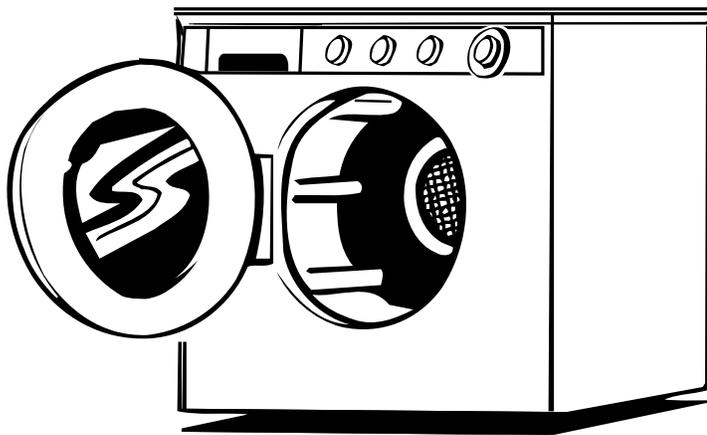




TECHNICAL SERVICE GUIDE

FRONT LOAD WASHER



**MODEL SERIES:
WSXH208T**



CONTENTS

FEATURES	2
TECHNICAL SPECIFICATIONS	3
TORQUE REQUIREMENT TABLE	4
RESISTANCE TABLE	5
SCHEMATIC DIAGRAM	6
TIMER CYCLE CHART	7
ELECTRONIC SPEED CONTROLLER	8
WIRING DIAGRAM	9
TROUBLESHOOTING DIAGRAMS	10
CONSTRUCTION AND OPERATION	16
FUNCTIONAL COMPONENTS AND PARTS	21
Top Panel	21
Service Panel	21
Loading Door	21
Door Strike	21
Door Hinge	22
Door Safety Switch Assembly (Door Lock)	22
Timer	22
Timer Diagnostic Aid	24
Water Level Control	26
Water Temperature Selector Control	26
End of Cycle Signal	27
Extra Rinse Switch	27
Water Inlet Valve	27
Automatic Dispenser	29
Drive Motor	31
Drive Belt	32
Electronic Speed Control	33
Drain Pump and Motor Assembly	34
Air Bell and Pressure Connecting Tube	34
Tub Counterweights	35
Air Shock Absorber	36
Door Bellows	36
Outer Tub	36
Inner Tub and Bearings	37
Tub Vanes	38
Exploded Views	39
Timer Diagnostic Aid	42

WARNING

This service manual is intended for use by persons having electrical and mechanical training and a level of knowledge of these subjects generally considered acceptable in the appliance repair trade. The manufacturer cannot be responsible, nor assume any liability, for injury or damage of any kind arising from the use of this manual.

FEATURES

- **PLASTIC OUTER TUB** - The two piece outer tub is formed from tough, lightweight polypropylene.
- **STAINLESS STEEL TUB** - The wash tub, which has a 25 year warranty, is constructed of durable stainless steel .
- **DISPENSER DRAWER** - The dispenser drawer will add diluted detergent, bleach, and fabric softener at the correct time during the wash or rinse cycles.
- **SUSPENSION SPRINGS** - The tub assembly is supported from the mid-section by two suspension springs which limit vibration to the outer cabinet.
- **AIR SHOCKS** - Two air shocks dampen tub vibration during out of balance conditions.
- **FRONT MOUNTED TIMER** - The timer is mounted to the front control panel. The timer knob contains an adjustment feature to calibrate the indicator mark.
- **MOTOR SPEED CONTROLLER LOCATION** - The motor speed controller is mounted to the right rear corner of the base where it is protected from damage.
- **DOOR LOCK PTC** - The PTC keeps the door locked during spin and tub coast down.
- **REPLACEABLE SIDE PANELS** - Side panels are replaceable, but are riveted to base and front panel for additional strength and rigidity.
- **FIXED FRONT PANEL** - The front (upper) panel is riveted to the side panels for maximum cabinet strength and rigidity.

TECHNICAL SPECIFICATIONS

MODEL SPECIFICATIONS

WSXH208T0WB

Cycles

Regular

Agitate (in seconds) 13.3

Pause (in seconds) 3.3

Delicate

Agitate (in seconds) 3.3

Pause (in seconds) 13.3

Electronic Speed Control

yes

(Operational Speeds)

Wash Speed 52 RPM

Spin Speed - slow 450 RPM

Spin Speed - fast 850 RPM

Drain Pump Motor (Detached 120 VAC Motor)

Pump Out Height Maximum (inches) 96

Drain Hose Length to Pump (Inches) 60

Pump Out Time 60 sec. max.

Pump Speed - RPM 2550

Pump Output

@ 3 ft. 13.0 GPM

@ 6 ft. 10.0 GPM

@ 8 ft. 8.0 GPM

Drive Motor (16 Pole Universal DC Motor)

Drive Belt (Poly-V, 6 rib) yes

Pulley Ratio (Pulley to Motor RPM) 1 to 16

Water Supply

Water Pressure - Maximum (PSI) 120

Water Pressure - Minimum (PSI) 15

Total Water Usage (max. gallons approx.) 25

Water Level (no load - measured from bottom of spin drum) 4-5/8" ± 3/8"

Electrical Data

Drive Motor (16 Pole DC Type Motor)

Volts (120, 60 Hz.) 15 amp yes

Wash R.P.M. 832

Spin R.P.M. 10400

Wattage

Agitate (with 10 pound clothes load) 370 max.

Spin (with 10 pound clothes load) 850 max.

Plumbing Requirements

Drain 1-1/2" Standpipe (minimum height 24") yes

Water Supply - Separate Hot & Cold Faucets yes

(3/4", 11-1/2 threads per inch)

Capacity (Inner Tub)

Cubic feet 2.65

Max clothes load 14 lbs.

Dimensions (Inches Minimum)

Height 34-5/8

Width 26-7/8

Depth 27 1/4

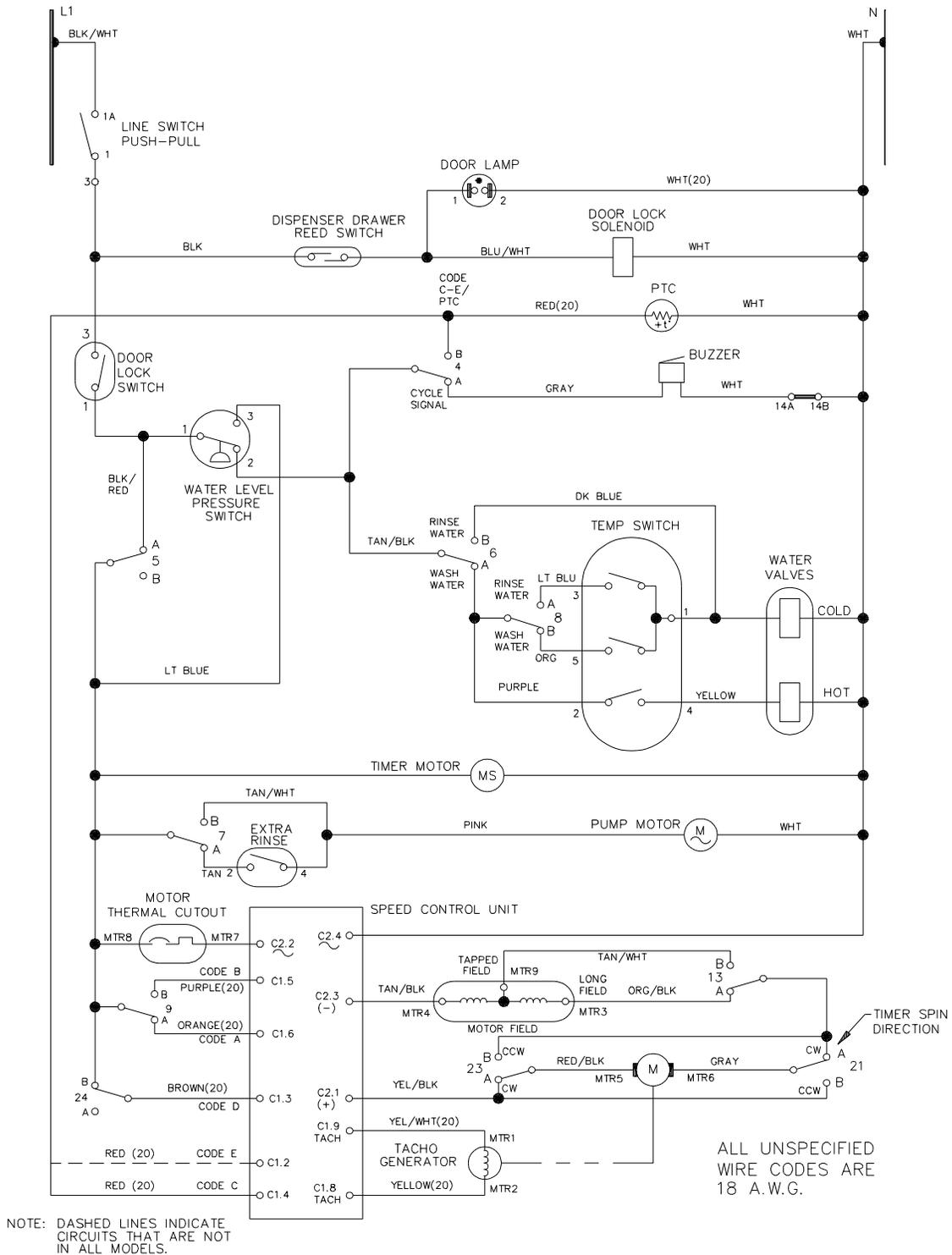
TORQUE REQUIREMENT TABLE

TORQUE REQUIREMENT TABLE	
DESCRIPTION	TORQUE
Buzzer Mounting	25 - 35 in. lbs.
Counterweight to Tub	60 - 75 in. lbs.
Door Hinge to Cabinet	30 - 45 in. lbs.
Door Hinge to Door	25 - 35 in. lbs.
Door Latch	10 - 15 in. lbs.
Door Lock Switch	15 - 25 in. lbs.
Door Frame Assembly Screws	10 - 15 in. lbs.
Drain Pump to Pump Bracket	25 - 35 in. lbs.
Tub Support to Tub	24 ft. lbs.
Extra Rinse Switch	24 - 35 in. lbs.
Motor to Tub	25 - 35 in. lbs.
Outer Tub Halves (front to rear)	70 - 85 in. lbs.
Pressure Switch Mounting	15 - 20 in. lbs.
Tub Pulley to Shaft	310 - 350 in. lbs.
Timer Mounting	20 - 40 in. lbs.
Water Temperature Switch	15 - 20 in. lbs.
Water Valve Mounting	25 - 35 in. lbs.

RESISTANCE TABLE

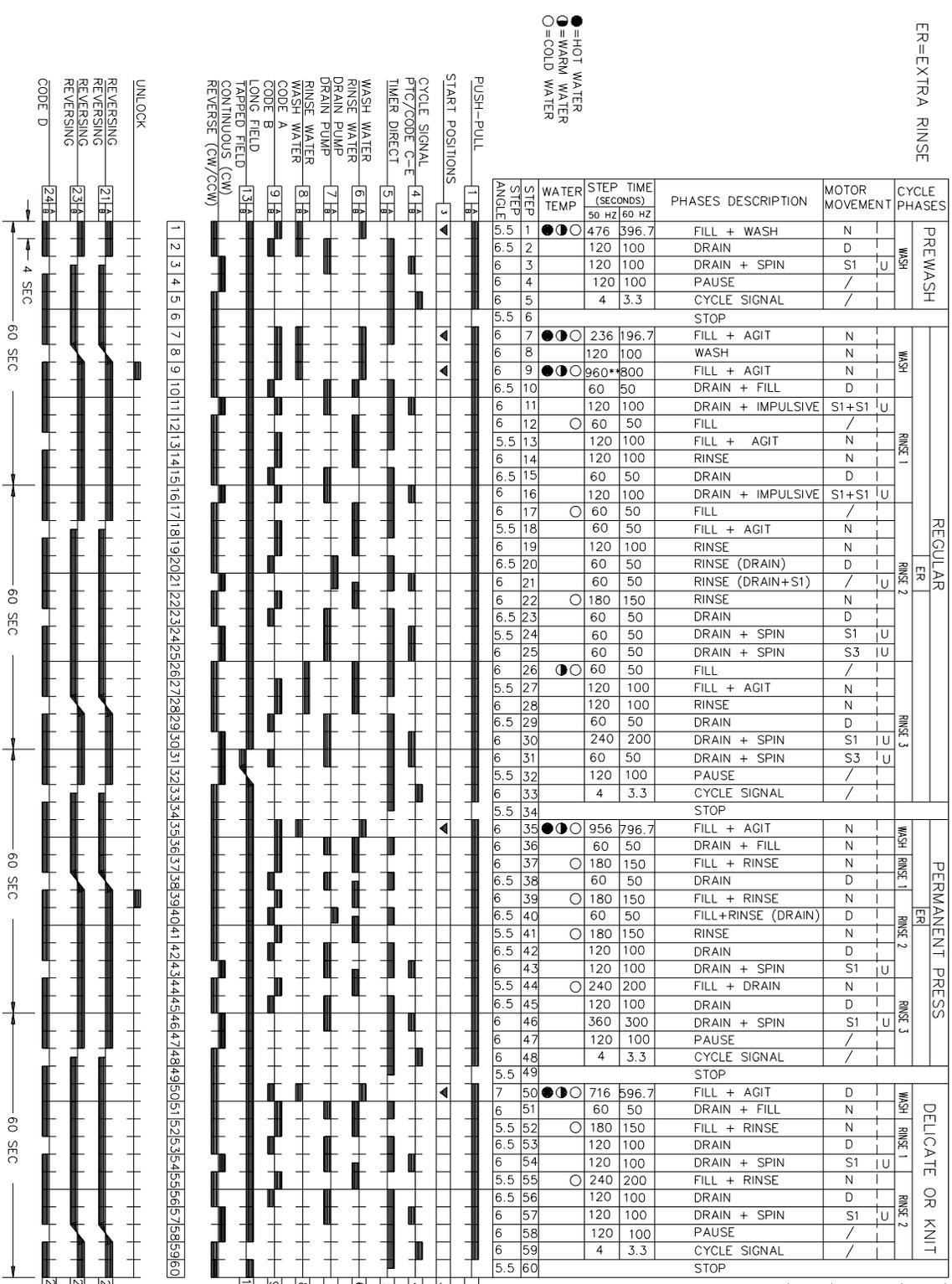
RESISTANCE TABLE	
Resistance Ohm value $\pm 10\%$ @ 77°F (25°C)	
Door Lock Solenoid	380
Drive Motor	
Stator Winding (Tapped Field)	0.37
Stator Winding (Full Field)	1.26
Tachogenerator	135
Motor Thermal Protector	less than 1
Armature (Rotor)	less than 5
Pump Motor	4.6
Timer Motor	2070
Water Valve Solenoids	880

SCHEMATIC DIAGRAM

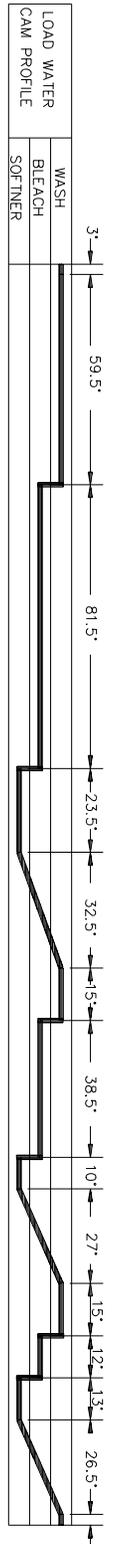


TIMER CYCLE CHART

● = HOT WATER
 ○ = WARM WATER
 ○ = COLD WATER



**STEP TIME IN STEP 9 WILL BE 896 (50 HZ). 746.7 (60 HZ)



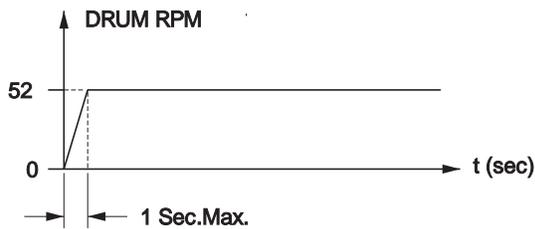
ELECTRONIC SPEED CONTROLLER

SPEED CONTROL OPERATION			CONNECTOR NUMBER	C1.2	C1.3	C1.5	C1.6
			SPEED CONTROL CODE	E	D	B	A
			TIMER CONTACT	4 B	24 B	9 B	9 A
DRUM RPM	TUB OPERATION	MOTOR MOVEMENT (See Below)					
52	AGITATE - CONTINUOUS (NORMAL)	N	0	1	0	1	
52	AGITATE - DELICATE (& DRAIN) CYCLE	D	0	1	1	0	
450	SPIN - CONTINUOUS	S1	1	X	0	0	
450	INTERVAL SPIN	S1+S1	1	X	0	1	
850	SPIN - CONTINUOUS	S2	1	X	1	0	

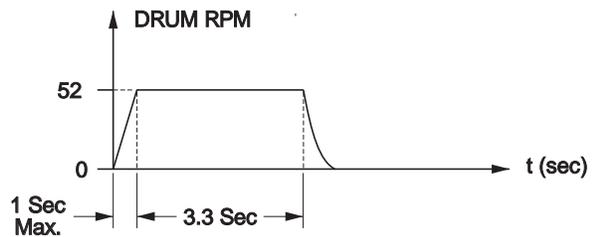
1 = 120 VAC, 0 = 0 VAC, X = DON'T CARE

MOTOR MOVEMENT

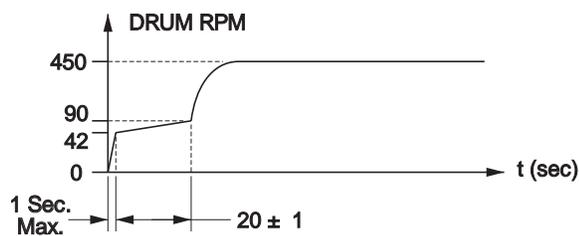
- NORMAL (N) WASH PHASE



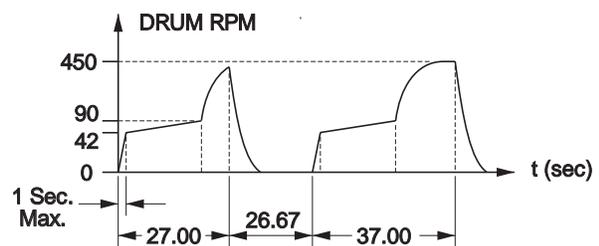
- DELICATE (D) WASH PHASE



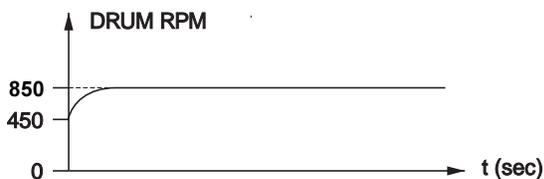
- SPIN 1 (S1) PHASE



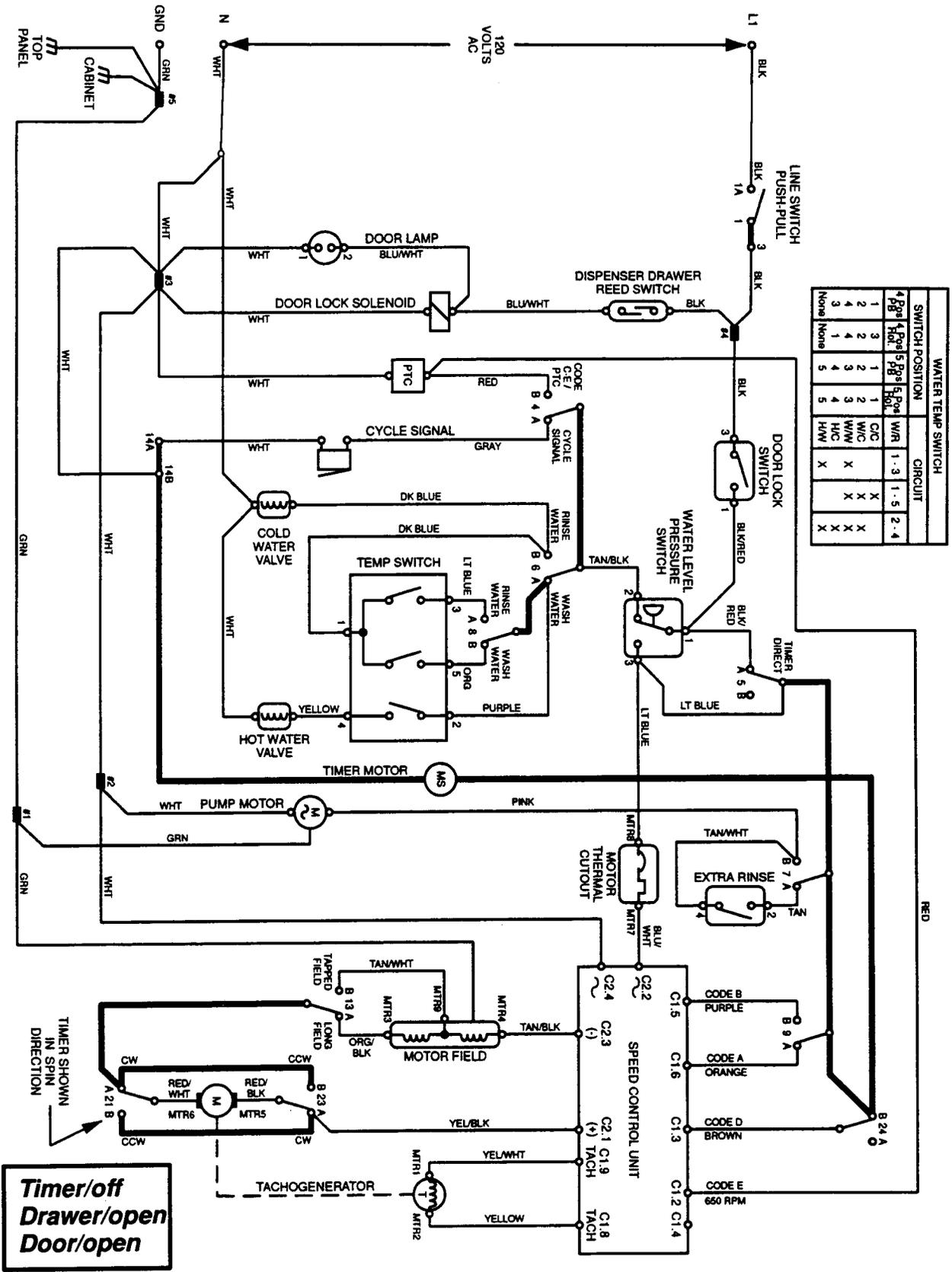
- INTERVAL SPIN (S1+ S1) PHASE



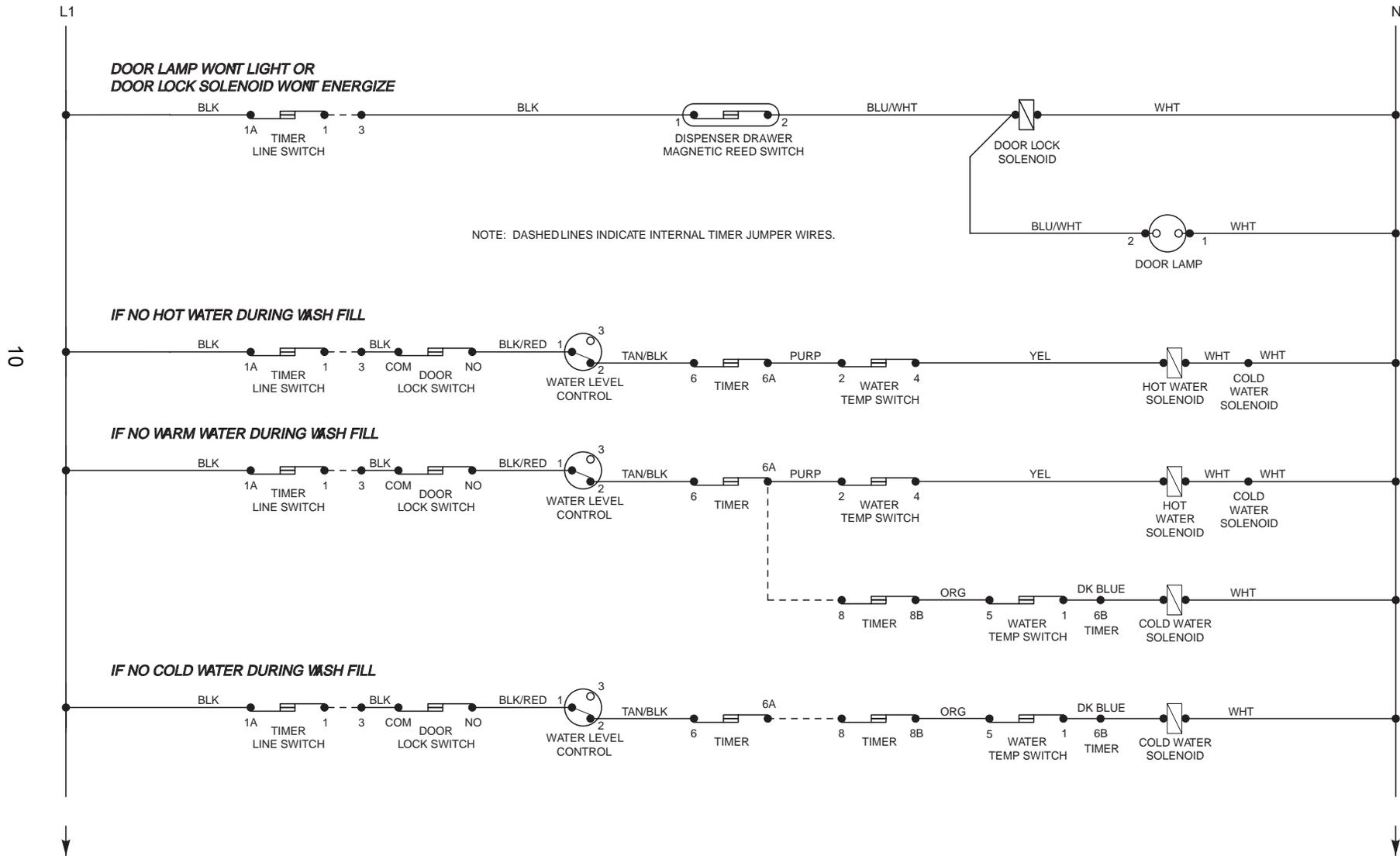
- SPIN 2 (S2) PHASE

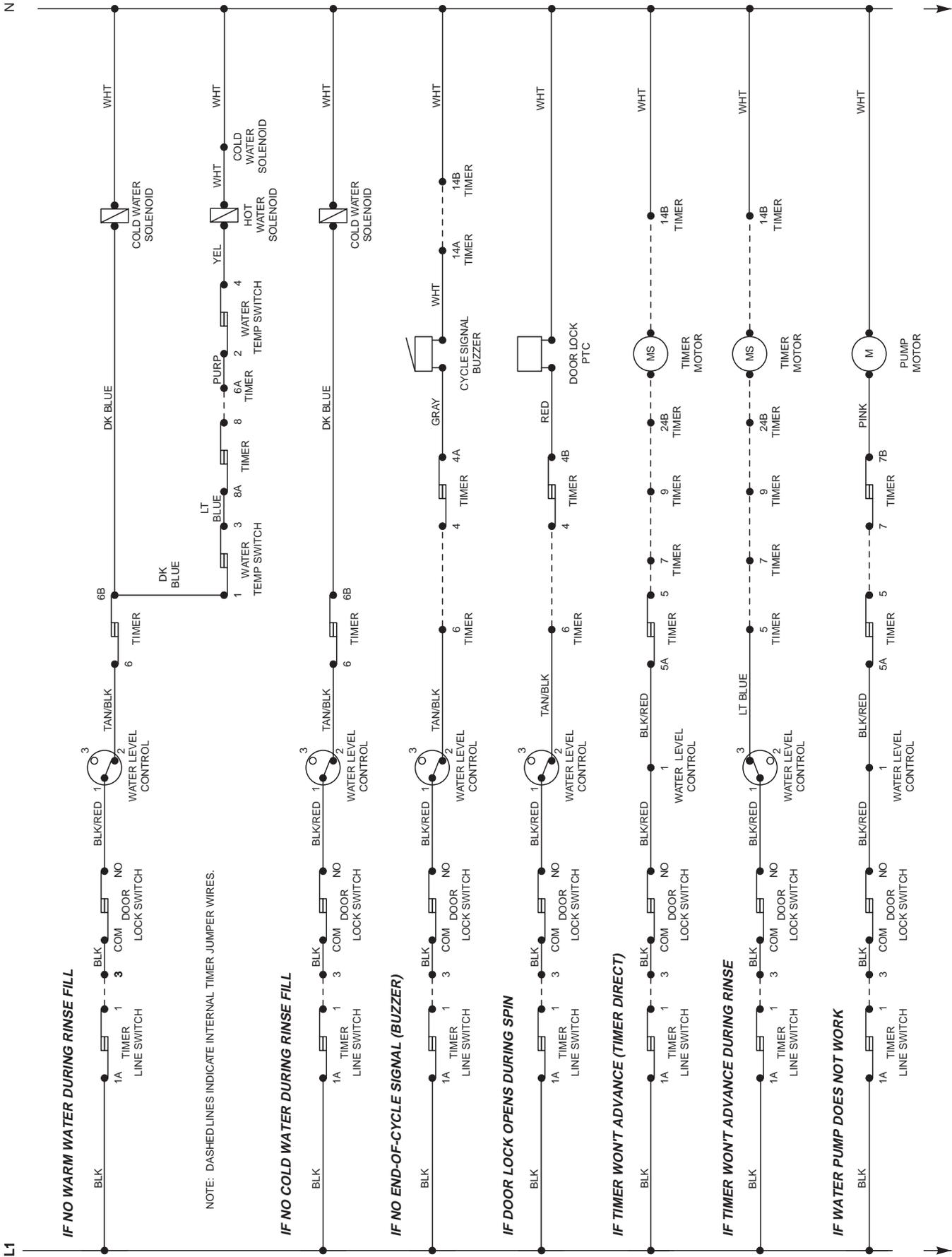


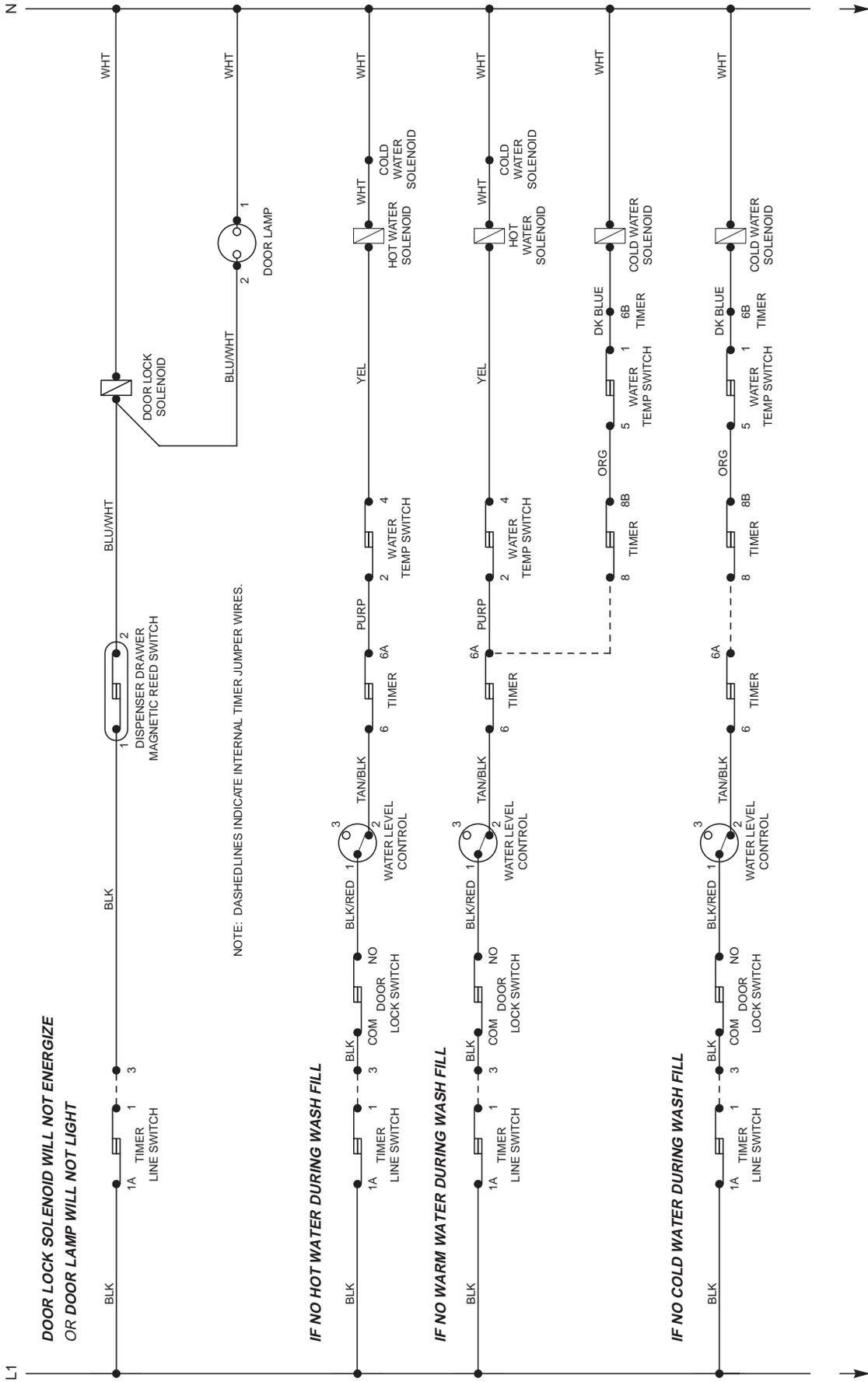
WIRING DIAGRAM

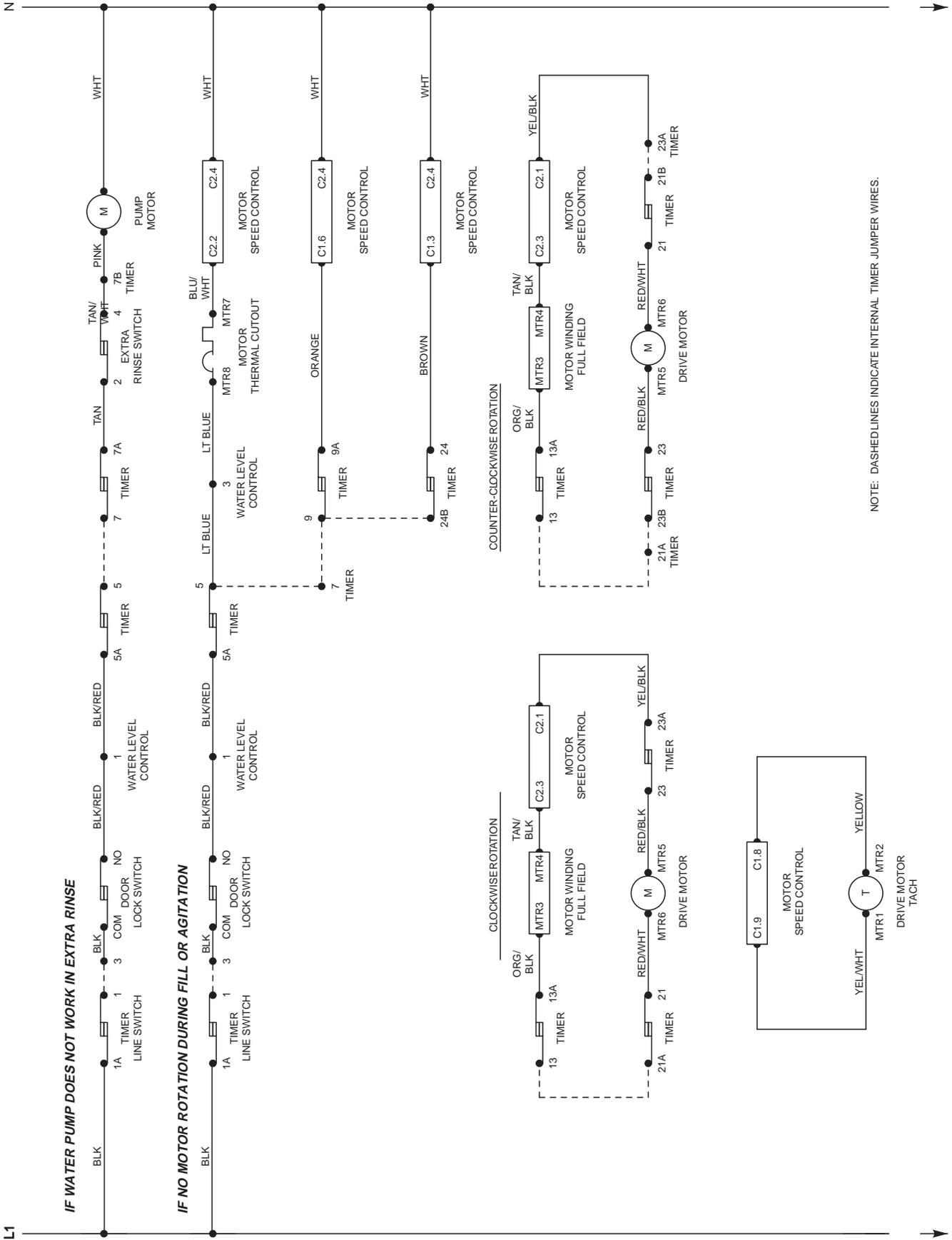


STRIP CIRCUIT TROUBLESHOOTING









CONSTRUCTION AND OPERATION

CONSTRUCTION

The front loading, tumble action clothes washer consists of a perforated, cylindrical tub suspended horizontally on its axis within a larger solid cylindrical tub. This assembly is suspended by springs within a four piece steel cabinet. A see through door and a flexible bellows (seal) provides access for loading and unloading clothes. The control console configuration provides the versatility of stacked or undercounter installations.

The washer is shipped with a painted top panel, but a galvanized panel is available if the washer is to be installed undercounter.

CONSOLE

The controls are mounted on the front of the cabinet and are accessible for service by removing the washer top service panel. On stacked installations, the dryer must be removed from the washer.

CABINET

The cabinet is made of heavy steel in a four piece design with an enamel finish. The sides and front are riveted at the front corners and base. The rear of the cabinet is galvanized steel and is secured with screws.

FRONT PANEL AND DOOR ASSEMBLY

The front panel is riveted to the side panels for maximum strength and structural rigidity.

BELLOWS

The bellows is a rubber sleeve that seals the suspended outer tub to the stationary cabinet front at the tub opening. Its purpose is to provide a water tight opening into the tub that can be sealed by the cabinet door, yet allow flexibility for the oscillation of the tub during the wash and spin cycles.

OUTER TUB ASSEMBLY

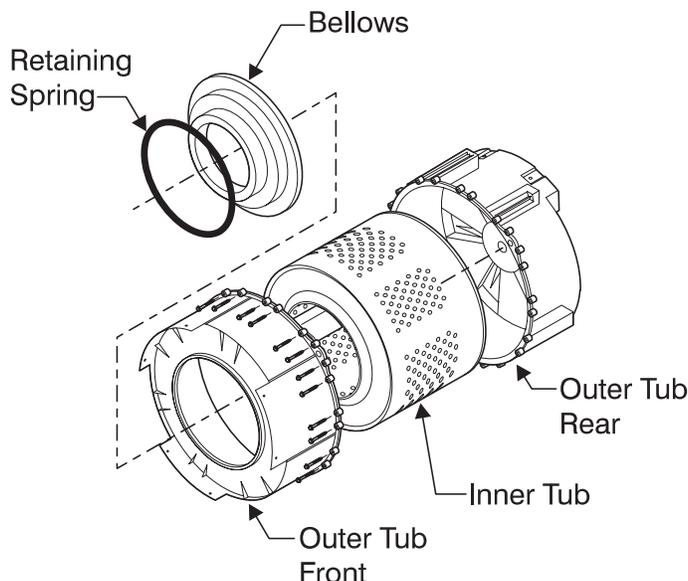
The outer tub assembly is supported by two suspension springs and stabilized by two air shock assemblies. Cement counter weights are mounted to the outer tub front (top & bottom), and the rear top. These counter weights prevent excessive oscillation of the entire suspended assembly during an unbalanced spin cycle.

INNER TUB ASSEMBLY

The inner tub is constructed of stainless steel. The circumference of the tub is perforated to allow water to flow through the tub as it revolves. A heavy steel shaft is pressed into the tub support which is bolted to the tub. The tub is supported by two ball bearings pressed into the rear of the outer tub.

A large drive pulley is mounted to the free end of the shaft that extends through the rear of the outer tub.

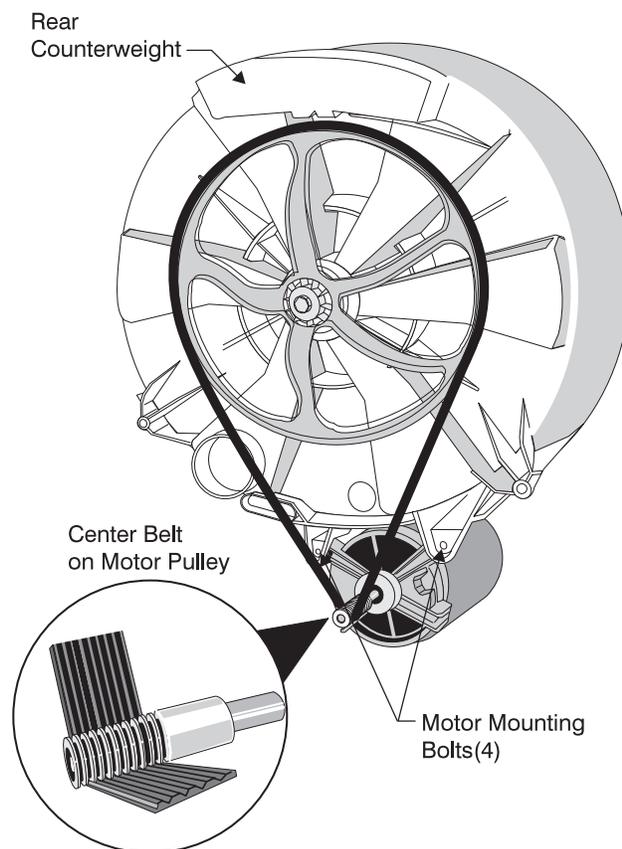
There are three plastic vanes mounted to the tub to aid in the washing action during the wash cycle. The rotation of the tub provides both the washing action during the wash cycle, and water extraction during the spin cycle.



DRIVE SYSTEM

The drive system consists of a reversible, variable speed, 16 pole DC motor coupled with an electronic speed control unit and timer. The motor drives the tub pulley with a 6 rib Poly-V belt. The motor rotates the tub at 52 RPM in a 16 second clockwise/counterclockwise motion with a 4 second pause at the end of each tumbling wash action.

The drive motor rotates the tub counterclockwise up to 850 RPM for further water extraction after certain drain cycles. If an unbalanced wash load prevents the washer from reaching full spin speed, the electronic speed control adjusts the spin speed back to agitate speed to allow the wash load to self adjust. Then the motor will again attempt to drive the spin basket up to 850 RPM. This procedure continues to repeat as necessary.



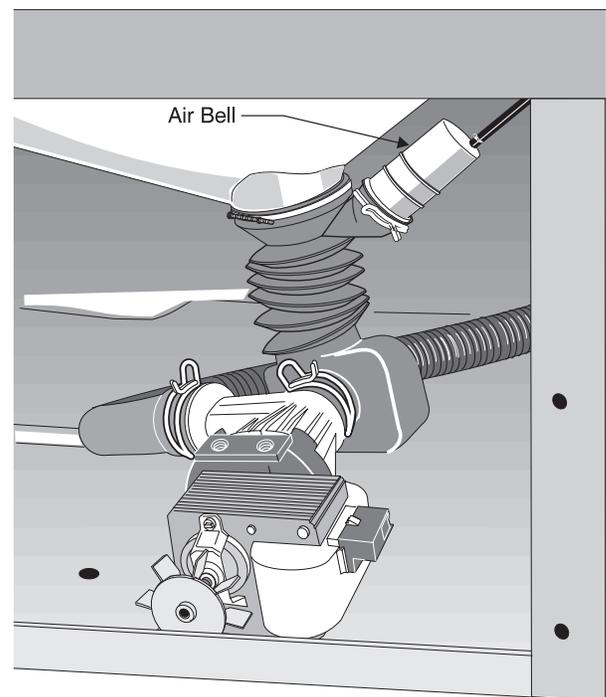
ELECTRONIC SPEED CONTROL

The electronic speed control monitors current draw and a built-in tachogenerator in the drive motor, to control RPM of the tub during wash and spin cycles.

DRAIN SYSTEM

The drain system consists of an air cooled, AC motor pump assembly, a bellows type sump hose, air bell, and a ribbed drain hose.

The drain pump and motor assembly is located in the right front corner and is mounted on the base. When the washer rinse cycle is completed, the timer energizes the pump motor to remove water from the tub before the spin cycle starts. The pump motor remains in operation throughout the spin cycle. The pump out rate is approximately 8 GPM under full load operation, which empties the tub within 60 seconds.



SUSPENSION AND STABILIZER SYSTEM

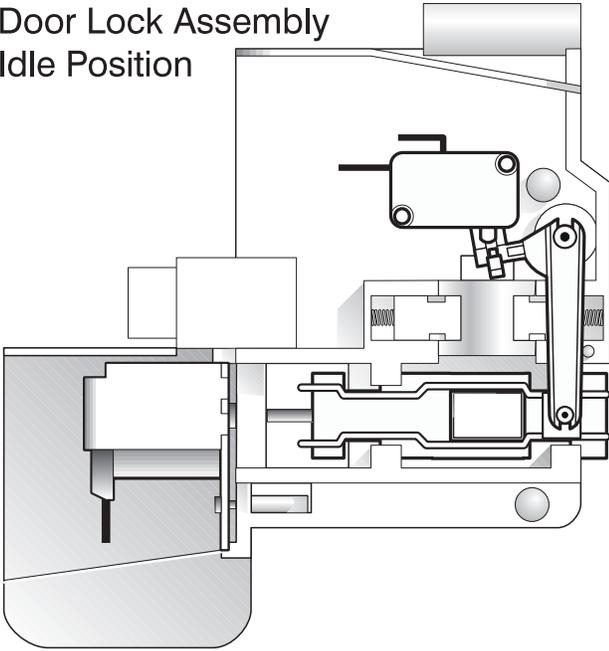
The entire tub assembly is suspended by two springs. The stabilizer system consists of two air shocks that are located between the outer tub and base, one per side. They provide a dampening action to stabilize tub assembly during spin cycles.

DOOR SAFETY SWITCH ASSEMBLY (Door Lock)

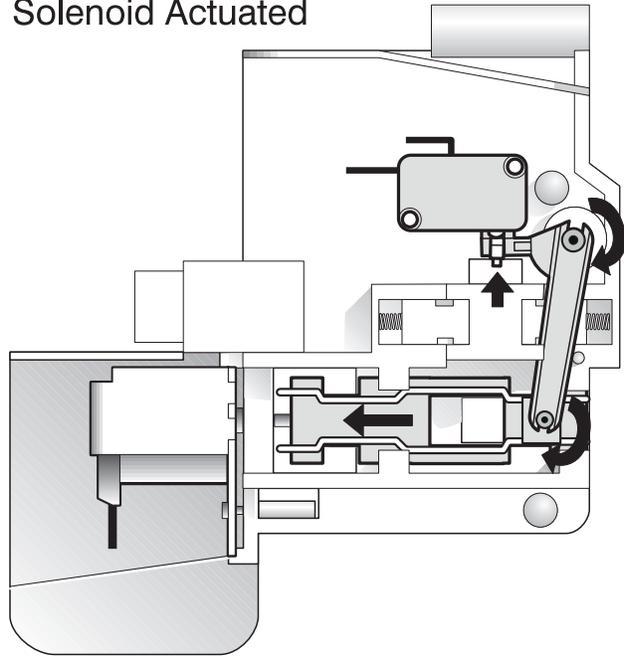
The door lock consists of a bracket to which is mounted a solenoid, door switch, and PTC. When the door is closed and the timer selector knob is pulled out, the solenoid is energized, which locks the door and closes the door lock switch through a series of levers on the door lock assembly. The door is locked whenever the washer is in operation to prevent the door from being opened.

If the user attempts to start a cycle with the door open, the solenoid is actuated but the washer will not start for two reasons. One, the door will not close because the lower door strike cannot pass through the opening while the solenoid is energized, the door just bounces open when attempting to close. Two, the door lock switch cannot close because the small lever is not in the "standby" position with the door open.

Door Lock Assembly
Idle Position



Door Lock Assembly
Solenoid Actuated



Door Switch

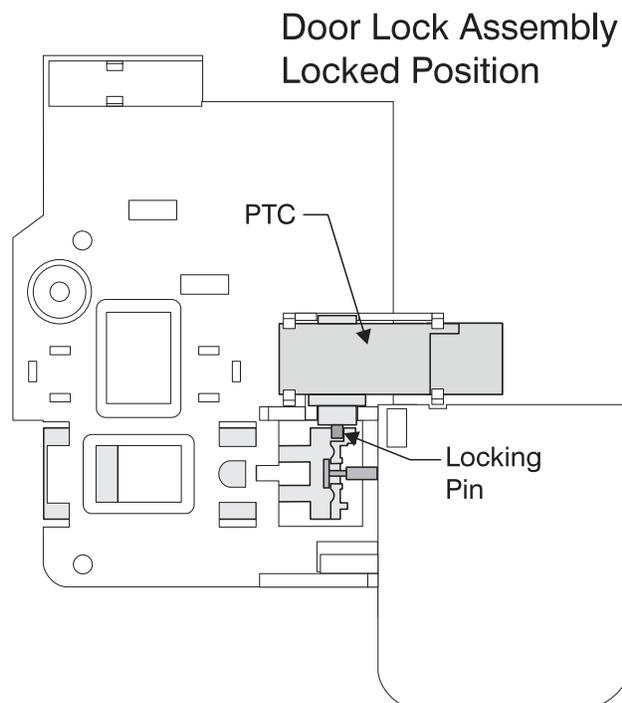
The door switch is snapped into the door lock mounting bracket and is secured with two spring tabs. The switch is actuated by the solenoid rather than the door. Closing the door causes the door strike to push the small lever upward into the "standby" position. When the user pulls the timer knob out, the solenoid is energized which pulls the spring loaded bracket and locks the door. This locking motion is transferred by the vertical lever to the door lock switch. Using the door locking motion to actuate the switch ensures that the door is closed and locked before the switch is closed.

Solenoid

The solenoid is energized whenever the washer is in operation to prevent the door from being opened.

Door Lock PTC (Positive Thermal Coefficient)

The PTC acts as a resistor or heat source to warm a bimetal that actuates a small rectangular pin which holds the solenoid in its retracted position even when the solenoid is de-energized. During spin, the PTC locking pin engages a catch in the spring loaded bracket that locks the loading door in the closed position. This locking pin will remain in this position long enough for the tub to come to a complete stop (approximately 40 - 65 seconds). As the bimetal cools, the solenoid will release, and the door may be opened.



TIMER

Contacts within the timer control the direction of the drive motor, water fill, drain pump, door lock, and end of cycle signal.

The timer provides four separate washing cycles: Knits & Delicates, Perm Press, Regular and Prewash.

Regular Wash Cycle

The Regular wash cycle provides up to 18 minutes of reversing tumble action for most fabrics. Three rinses and a high-speed final spin complete the cycle.

- **Wash** provides 18 minutes of reversing tumble action for normally soiled fabrics.
- **Light Wash** provides 14 minutes of reversing tumble action for lightly soiled fabrics.

Perm Press Cycle

The Perm Press wash cycle provides up to 13 minutes of reversing tumble action for permanent press garments. Three rinses and two spins complete this cycle. Cold rinses are automatically provided when the Perm Press cycle is selected.

To help reduce wrinkling, Perm Press cycle does not have a final high-speed spin.

Knits & Delicates Cycle

The Delicate wash cycle provides up to 9 minutes of gentle reversing tumble action, which consists of 3.3 seconds of agitation followed by a 17 second pause, which repeats for the duration of the cycle. Two rinses and two spins complete the cycle. Cold rinses are automatically provided.

Prewash

During prewash, the washer will tumble the load for 6 minutes, drain and spin.

NOTE: For detailed information on Laundry preparation, sorting, factors affecting performance, and laundry products, refer to the Owner's Guide.

For best results, follow fabric care label directions on specific items to be washed. Check Operating Instructions "Control Settings Chart" if the care label is not available.

WATER TEMPERATURE CONTROL

Water Temperature Selector

The water temperatures for washing and rinsing are set by using the water temperature selector. Turn the knob to the desired water temperature combination. Several wash/rinse water temperature combinations are available. Selections are:

"COLD-COLD", "WARM-COLD", "WARM-WARM", "HOT-COLD", (and "HOT-WARM", not used on domestic models).

Correct water temperature is necessary for good washing results. To help determine the best wash temperature for particular loads of clothes, refer to the fabric care label directions on items to be washed. Check Operating Instructions "Control Settings Chart" if the care label is not available.

WATER LEVEL CONTROL

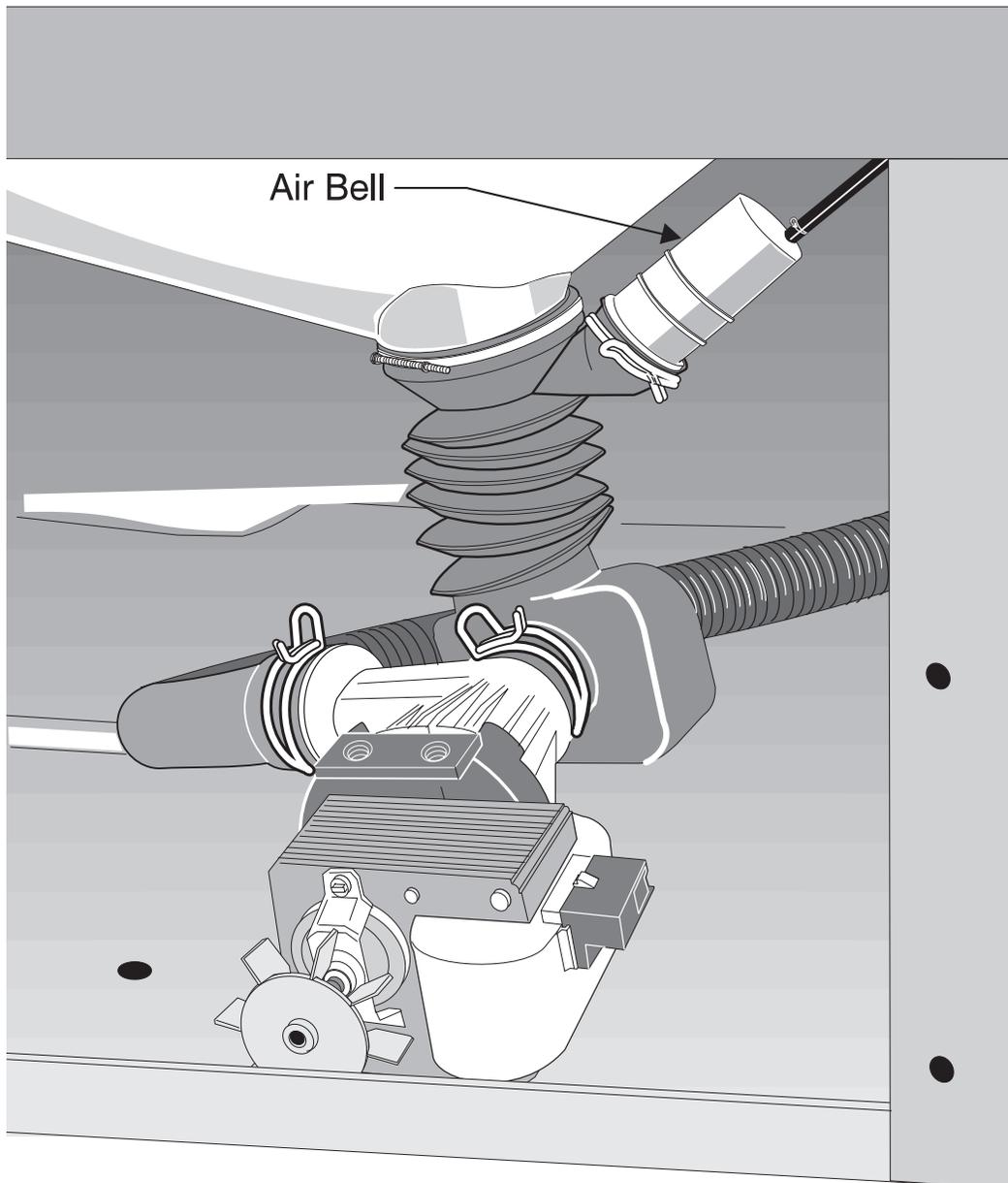
The water level control provides the proper amount of wash and rinse water, but is not user adjustable. The bulkiness of clothes is often more important than their dry weight when determining a water level. Articles that absorb a large amount of water, such as pillows, blankets, and rugs require more water than indicated when they are weighed. The water level control will automatically provide more water with these loads. The water level control is a pressure activated single-pole, double-throw switch connected to an air bell at the sump housing. A black rubber hose connects the pressure switch to the air bell. Its purpose is to determine the water level within the tub and control the operation of the water fill valve.

WATER FILL VALVE

The two coil valve assembly is mounted on a bracket and fastened to a brace at the upper right rear inside the cabinet. Raise the top panel for access to water valve.

Under normal operating conditions, it takes several seconds for the valve to completely close and stop the water flow after the solenoid circuit is opened. This prevents water hammer. The water valve flow rate is 4.50 GPM at 20 PSI and 7.0 GPM at 120 PSI.

WATER VALVE INLET SCREENS MUST BE KEPT CLEAN AND IN GOOD CONDITION. A PLUGGED BLEEDER HOLE IN WATER VALVE DIAPHRAGM OR MINERAL DEPOSITS ON THE ARMATURE MAY CAUSE THE WATER VALVE TO FAIL AND RESULT IN CONTINUAL WATER FILL.



FUNCTIONAL COMPONENTS AND PARTS

SAFETY PRECAUTIONS

Always turn off the electric power supply before servicing any electrical component, making ohmmeter checks, or making any parts replacement.

All voltage checks should be made with a voltmeter having a full scale range of 130 volts or higher.

After service is completed, be sure all safety grounding circuits are complete, all electrical connections are secure, and all access panels are in place.

A NOTE ABOUT QUADREX® SCREWS

Quadrex® screws are used in many areas of this product. They may be removed with a #2 phillips bit or a #2 square drive (Robertson) bit. Square drive bits are used on the assembly line because they do not slip as easily when the screw is tightened.

TOP PANEL

The washer is shipped with a decorative top panel, but a galvanized panel is available if the washer is to be installed undercounter.

To Remove the Painted Top Panel:

1. Remove screws (4) on hinges securing top to cabinet.
2. Slide top panel forward to disengage top from the top panel front mounting brackets.

To Remove Galvanized Steel Panel:

1. Remove the screws (6) securing the galvanized steel panel to the top of the cabinet.

SERVICE PANEL

To Remove or Replace Front Service Panel:

1. Remove the two 1/4" hex screws located at each bottom corner. Pull down and remove panel.

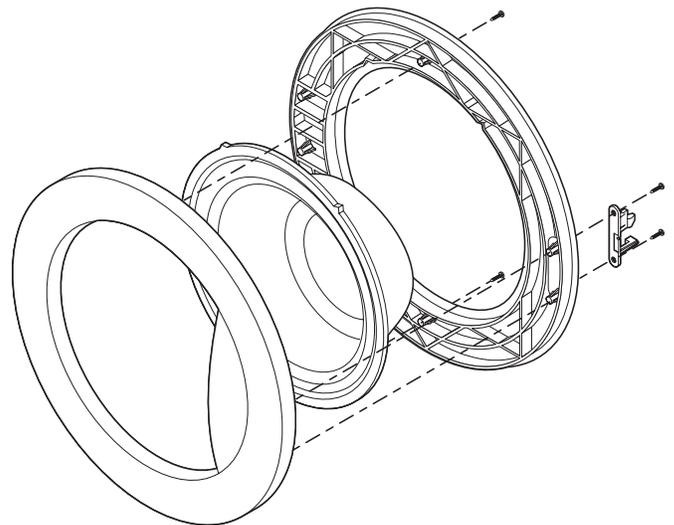
NOTE: The washer wiring diagram and tech data sheet are in an envelope attached to the back side of the service panel.

LOADING DOOR

To Remove Loading Door or Door Glass:

1. Disconnect washer from electrical supply.
2. Remove door by removing door to hinge mounting screws (2).
3. Remove door front cover mounting screws (2).
4. Pull or gently pry off front cover. There is a rib molded on the outer edge of the front cover that snaps into a groove on the door.
5. Remove glass by depressing release tabs (3) one at a time until glass is free.
6. Snap glass into door frame by pressing into place. Note locating notches on glass which ensures correct position.

DOOR STRIKE



To Remove or Replace Door Strike:

1. Disconnect washer from electrical supply.
2. Open loading door.
3. Remove screws (2) which secure strike to inner door panel.
4. Install new strike and reverse procedure to reinstall.

DOOR HINGE

To Remove Door Hinge

1. Disconnect washer from electrical supply.
2. Remove door by removing door to hinge mounting screws (2).
3. Pull loose left side of rubber bellows to gain access to hinge.
4. Slip hand through opening between front panel and bellows and hold hinge while removing hinge mounting screws (2).

5. Pull hinge arm out of slot in front panel and remove hinge.
6. Reverse procedure to reassemble.

DOOR SAFETY SWITCH ASSEMBLY (Door Lock)

To Remove or Replace Door Safety Switch:

1. Disconnect washer from electrical supply.
2. Remove top panel.
3. Pull loose right side of bellows from front to access switch assembly.
4. If necessary, to provide enough slack to gain access to switch assembly, remove timer wiring harness wire ties from their anchoring points (3) inside front corner of cabinet. Wire ties are most easily released by using a small 7/32" box end wrench. Press the wrench over the expandable part of the wire tie to compress, and while compressed, pull to remove. It may be helpful to remove lower service panel for better access also.
5. Remove switch assembly mounting screws and remove wires from switch, solenoid, and PTC.
6. Reverse procedure to reassemble.

TIMER

The timer interfaces with the electronic speed control unit and the drive motor, and performs the following functions:

1. Provides AC power to the electronic speed control unit.
2. Reverses the direction of the DC drive motor, by reversing the polarity on the motor brushes.
3. Controls the entire timing sequence during the cycle selected.

TIMER OPERATION

The timer works with the electronic speed control in a "Master / Slave" type relationship. The timer (or master) tells the electronic speed control what to do and when to do it, and the electronic speed control controls the motor speed functions such as ramp-up and speed monitoring.

The timer is an interval timer like previous timers but the step times can be various lengths (i.e. 3.3, 50, 100, 146.7, 150, etc.) versus fixed. This allows the timer to be more flexible. The entire agitation portion of the wash cycle can be contained in one step and not spread over many steps.

The timer contains two sets of cams that drive switches, and four cams that are used to count time. The cams are driven by the timer motor through a set

of reduction gears and a crank and pawl assembly. The fast cam controls the reversing tumble action of the drum by reversing the polarity of the DC voltage to the drive motor. It also signals the electronic speed control through codes that the polarity is changing and the electronic speed control should stop the drive motor, allow the timer to change polarity, then resume motor rotation. The slow cam controls the timing and functions of the other components within the washer system (i.e. pump, water valves, etc.).

The timer also interfaces with the dispenser system and defines when to dispense detergents, bleaches, and fabric softeners. The shaft has a cross shaped feature that mates with a matching feature on the dispenser cam. The dispenser cam profile is designed to match the program set within the timer.

Timer Operation During Wash Mode

The timer has four wash cycles that may be chosen (Pre-Wash, Regular Wash, Permanent Press, and Knits and Delicates). Only the Regular wash has two different starting points, the first provides for a longer wash for heavier soiled clothes and the second for normally soiled clothes.

If the timer dial is set to the start of Pre-Wash, Permanent Press, Knits and Delicates, or the second start position of Regular Wash, the timer will wait for the water level pressure switch to be satisfied before agitating the clothes load. Only in the first starting position of the Regular Wash cycle will the timer allow the clothes to tumble while the water is filling the tub.

To understand the timing sequence of the fast cam during agitation, let's look at an example of what happens during a Regular wash cycle beginning at the second starting position. The slow cam sets up the water temperature switch to provide hot, warm or cold wash water by closing contacts 6A and 8B, it provides part of the agitation code (code A) to the electronic speed control by closing contact 9A, and it sets up the to operate on the long field winding by closing contact 13A.

The fast cam rotates one full revolution every 200 seconds (3.33 minutes). Every 16.67 seconds the cam opens fast cam contact 24B for 3.33 seconds. This interrupts the agitation signal code (code D) to the electronic speed control. The electronic speed control then turns off the drive motor. During this OFF time, fast cam contact 21 will switch from 21A to 21B and contact 23 will switch from 23A to 23B to reverse the polarity of the DC motor voltage to the drive motor. At the end of the 3.33 second time period, fast cam contact 24B closes, returning the

agitation code (code D) to the electronic speed control. The electronic speed control then turns the drive motor ON again. This "reversing" process continues, with the fast cam contacts switching back and forth, for the duration of the wash time remaining in the wash cycle.

The fast cam profile is designed to tumble the clothes load 1 time CW, 1 time CCW, 2 times CW, 2 times CCW as viewed from the front of the machine. During the first few tumble sequences, the drum may rotate in the same direction three or four times before changing directions. This is normal. A special cam within the timer must cycle through a sequence before it "unlocks" the reversing protection arm built in the timer. This feature ensures that the drive motor is not allowed to turn ON in the opposite direction if it were coasting down from a high speed spin and the timer was advanced into an agitation cycle.

Timer Operation During Spin Mode

To understand the timing sequence of the timer during spin, let's look at an example of what happens during a Regular wash cycle before the timer advances into the first spin. The slow cam sets up the water temperature switch to provide cold rinse water by closing contacts 6B and 8A, the electronic speed control spin code and door lock thermal safety delay device (PTC) is turned on by closing contact 4B, the pump is turned on by closing contact 7B, and the motor is set up to operate on the long field winding by closing contact 13A.

The timer has three different rinse phases. Within each phase the timer agitates, drains, and spins. The timer basically provides a signal code to the electronic speed control and lets it control the motor motion.

In the rinse phase, the timer calls for an impulse spin, where two short ramp-ups and spins occur. The timer closes slow cam contacts 4B and 9A sending the signal to the electronic speed control to generate these spins.

In the second rinse, the timer calls for a normal ramp up and spin speed at 450 rpm. The timer disables the fast cam and closes direction contacts 21A and 23A with a reversing protection lever that ensures the contacts are closed at all times during spin. The drive motor is also set up to operate on the long field winding by closing contact 13A.

In the third spin, the spin is a two part spin. The timer closes direction contacts 21A and 23A, and set the drive motor to operate on the long field winding by closing contact 13A. After 200 seconds of spinning at 450 rpm, timer contact 13A switches over to 13B energizing the drive motor's tapped field winding and disabling the long field winding. Slow cam contact 9B closes sending the signal to the electronic speed control to accelerate the drive motor to 850 rpm.

Within the middle of the second rinse phase (Regular and Permanent Press only) is an Extra Rinse cycle. The slow cam will try to enable the pump by closing slow cam contact 7A. If the Extra Rinse switch is set to the YES or ON position, the pump will turn on and discharge the water for 50 seconds. The timer will then fill the tub with water and resume agitation. If the Extra Rinse switch is set to the NO or OFF position, the timer will signal the electronic speed control to gently tumble the clothes load by closing slow cam contacts 9B and 24B.

At the end of the wash cycle the timer pause for 50 seconds to allow the spin tub to coast down to a complete stop. During this time, the timer disables all the electronic speed control code signals, and releases the door lock thermal safety delay device (PTC). At the end of 50 seconds, the timer will close slow cam contact 4A energizing the cycle signal buzzer for 3.3 seconds then advance into the Stop position of the timer.

To Test the Timer

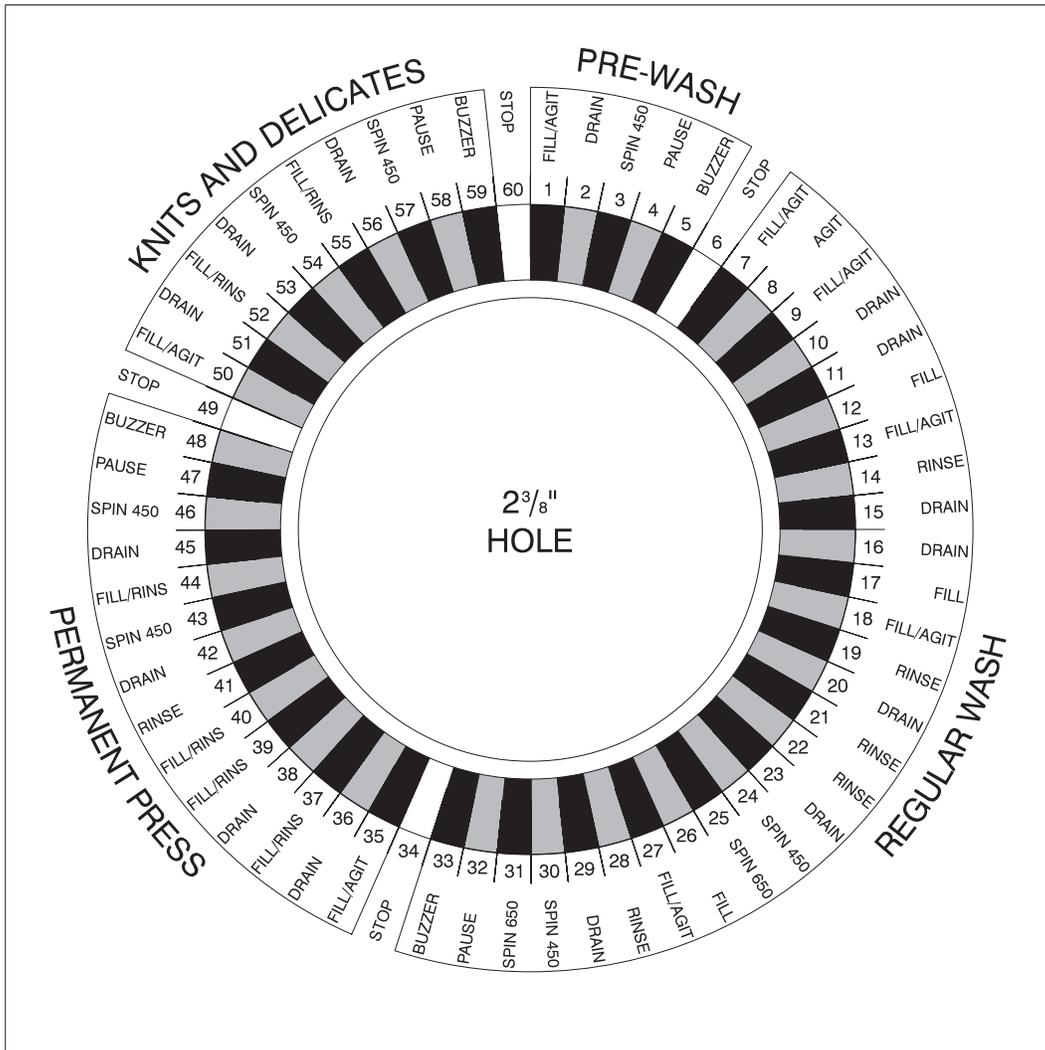
If the timer is suspected of faulty operation, check the washer's timer cycle chart and electrical schematic diagram.

1. Let the timer advance or index forward to the portion of the cycle in question. Use the **TIMER DIAGNOSTIC AID** located on page 26 or 44 to assist in locating correct increment.
2. If a component controlled by the timer fails to function as the timer advances through the cycle, check for voltage at the timer terminal. See the appropriate wiring diagram. If voltage is supplied to the component, check the component as described in this section.
3. Disconnect power to washer and check continuity through timer contacts.
4. If the timer contacts fail to close in the sequence shown in the timer chart, or are burned (have resistance measurable with an ohmmeter), replace the timer.

To Remove or Replace Timer:

1. Disconnect the washer from electrical supply.

TIMER DIAGNOSTIC AID



Copy and Cut Out Center Hole- Place Over Timer Knob and Align With "STOP" Position.
 If copier is not available, a useable Timer Diagnostic Aid is also printed on page 44.

2. If dryer is stacked on washer, remove clothes dryer from top of washer.
3. If freestanding or undercounter installation, remove the top panel.
4. Remove timer knob assembly by pushing in while turning counterclockwise (CCW) to unscrew.
5. Use pliers to squeeze timer indicator locking tabs simultaneously, while pulling outward to remove.
NOTE: Small teeth on timer indicator are used to adjust indicator dot if cycle does not correspond with indicated function.
6. Turn timer mounted dispensing cam clockwise (CW) to position rectangular holes at the 3 o'clock and the 9 o'clock position, over timer mounting screws and remove screws.
7. Slide timer rearward to remove (dispensing cam

does not have to be removed). Disconnect timer terminal blocks to free timer. Note that timer and terminal blocks are color coded and keyed (to slot in timer) to ensure correct placement.

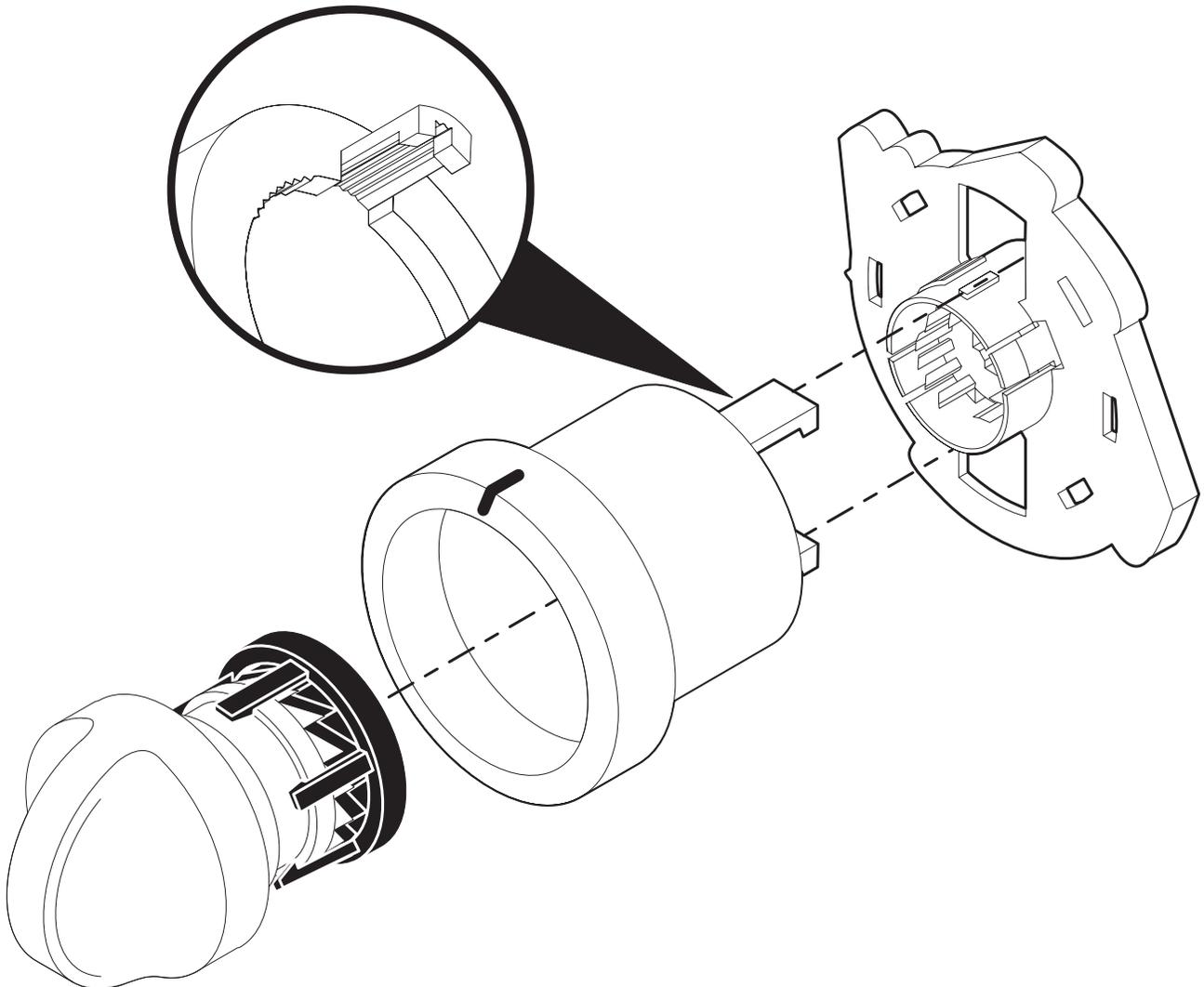
8. Install new timer, noting timer shaft and indicator are keyed to assure correct orientation.

NOTE: Ensure wiring to new timer is correct before applying power and testing. Timer has AC and DC connections. Timer terminal blocks and timer are color coded to indicate correct positioning. Refer to appropriate electrical diagram if necessary.

9. Reverse procedure to reassemble.

WATER LEVEL CONTROL

The water level control is a pressure activated single-



pole, double-throw switch connected to an air bell at the sump hose. A black plastic tube connects the pressure switch to the air bell. Its purpose is to determine the water level within the tub and control the operation of the water fill valve. As the water level rises in the tub, air in the pressure tube is compressed and forced against the diaphragm in the water level control switch.

DO NOT ATTEMPT TO ADJUST THE RANGE OF THE WATER LEVEL CONTROL.

To Test Water Level Control:

Do not condemn a water level control until the entire system has been examined and tested. For example, if the air bell, located at the sump area, has filled with water, the water level control will overflow the tub.

1. If any water is remaining in the tub, empty by advancing timer to a drain cycle (see cycle chart).
2. After water has drained out, turn off washer and remove front service panel.
3. Examine the air bell. There should not be any water or foreign objects visible in the air bell.
4. Turn timer to a fill cycle. After the water level control has been satisfied, push and turn the timer to "OFF," open door and measure the depth of water. The depth should be 4-5/8" ± 3/8". If not, drain washer and continue with step 5.
5. Disconnect the washer from electrical supply.
6. Remove the wire from the terminal "1" on the water level control.
7. Check continuity between terminals 1 and 2. Continuity should exist. If no continuity exists, replace the water level control.
8. Remove the pressure tube from water level control and attach a short piece of scrap pressure tube to water level control. Blow into tube until water level control "trips" and tightly clamp end of tubing shut.
9. Recheck continuity between terminals 1 and 2. No continuity should exist. Check for continuity between terminals 1 and 3. Continuity should exist. Leave the clamped scrap tubing attached to the water level control for a few minutes. If water level control "trips" during this time frame, the internal diaphragm is leaking and the water level control must be replaced.

To Remove or Replace Water Level Control:

1. Disconnect washer from electrical supply.
2. If dryer is stacked on washer, remove clothes dryer from top of washer. **Note:** It may be possible to slide dryer back far enough to access water level control without removing the dryer, depending upon individual installation.
3. If freestanding or undercounter installation, remove

the top panel.

4. Remove one (1) screw securing the water level control to cabinet.
5. Remove wiring to the water level control.
6. Remove the water level control pressure tube.
7. Reverse procedure to install new water level control.

WATER TEMPERATURE SELECTOR CONTROL

The water temperatures for washing and rinsing are set by using the water temperature selector. Turn the knob to the desired water temperature combination. Several wash/rinse water temperature combinations are available.

Selections are:

"COLD-COLD", "WARM-COLD", "WARM-WARM", "HOT-COLD", and "HOT-WARM" ("HOT-WARM" is not used on domestic models).

To Test Water Temperature Control Switch:

Continuity of the water temperature control switch contacts can be checked using the chart or the wiring and schematic diagram on the back side of the service panel.

To test, remove wires from switch and check continuity between terminals as indicated on the water temperature control switch chart found on the unit's electrical diagram.

WATER TEMPERATURE SWITCH			
CIRCUIT			
WASH/RINSE TEMP	1-3	1-5	2-4
C/C		X	
W/C		X	X
W/W	X	X	X
H/C			X
H/W	X		X

To Remove or Replace Water Temperature Control Switch:

1. Disconnect the washer from electrical supply.
2. If dryer is stacked on washer, remove clothes dryer from top of washer. **Note:** It may be possible to slide dryer back far enough to access water temperature control switch without removing the dryer, depending upon individual installation.
3. If freestanding or undercounter installation, remove the top panel.
6. Remove knob from water temperature control switch.
7. Remove two screws securing the water temperature control switch to cabinet.

8. Remove wiring to the water temperature control switch and remove the switch.
10. Reverse procedure to install new water temperature control switch.

END OF CYCLE SIGNAL

When in the ON position, the cycle signal will sound when the wash cycle is completed and the clothes are ready to be removed for drying. The level of sound is adjustable from LOW to HIGH.

To Remove or Replace End of Cycle Signal:

1. Same as replacement procedure for Water Temperature Control Switch.

EXTRA RINSE SWITCH

The extra rinse switch provides an extra rinse in the regular wash cycle when selected. This is accomplished by energizing the drain pump to remove the water from the wash tub. When enough water is removed from the tub that the pressure switch is no longer satisfied, the pressure switch will reset and energize the fill valve, thus creating an extra rinse.

To Remove or Replace the Extra Rinse Switch

1. Same as replacement procedure for Water Temperature Control Switch.

WATER INLET VALVE

The water inlet valve is actually two solenoid operated valves in one body. A hot water inlet and a cold water inlet valve discharge into a common mixing chamber. The flow of water out of the chamber is controlled by a rubber flow washer capable of maintaining a flow rate of 4.2 gallons per minute \pm 10%, with incoming water pressure of 20 to 120 P.S.I. The inlet valves are controlled by the timer and water temperature selector switch, individually or together, to provide hot, cold, or warm water for washing and cold or warm water for rinsing. The temperature of the warm mixture will be dependent upon the temperature and pressure of the hot and cold water supply lines.

Valve Operation

Both inlet solenoid valves are identical in construction and operation. The valve body provides an air passage

with a large orifice and seat where the water can be stopped. The outlet of the valve body empties into the mixing chamber. A moveable rubber diaphragm operates against the valve seat to start and stop the flow of water. The diaphragm is operated by water pressure. It has a small bleed orifice outside the seat contact area, and a large main orifice at its center. The armature of the solenoid serves to open and close the main orifice. The armature operates within a closed metal tube (valve guide) which is sealed by the outer edge of the diaphragm to the valve body. A coil spring holds the armature down against the diaphragm main orifice when the solenoid is not energized.

The following line drawings and text explains basic valve operation.

When the valve is in a closed position, the solenoid is not energized. Water has bled through the diaphragm bleed orifice placing incoming line pressure on top of the diaphragm. The bottom of the diaphragm is essentially at atmospheric pressure (open to the outlet) and the pressure differential holds the valve shut.

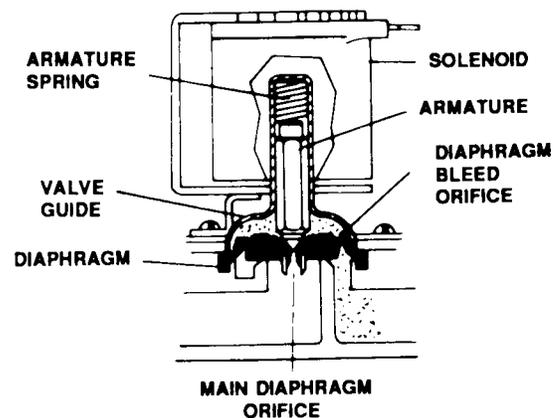


Figure
Water Valved Closed

When the solenoid is energized, the resulting magnetic field pulls the armature up into the valve guide.

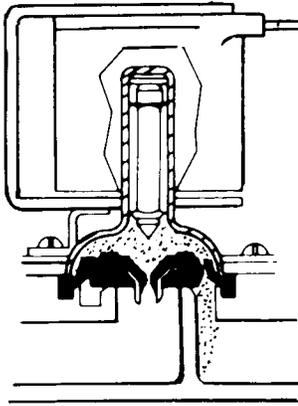


Figure
Water Valve-Open

The armature spring is compressed by this action. When the armature moves up, it allows the water on the top of the diaphragm to drain through the main orifice.

The diaphragm bleed orifice is much smaller than the main orifice and will not admit enough water to maintain pressure on the top side of the diaphragm. Thus, as the pressure on the top of the diaphragm is reduced to almost zero, the pressure on the bottom lifts the diaphragm off the valve seat, allowing a full flow of water.

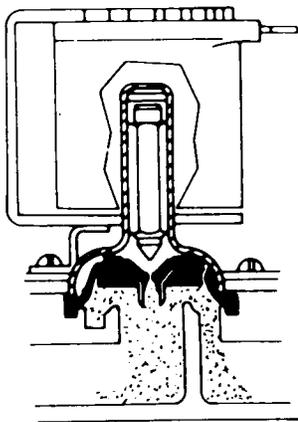


Figure
Water Valve- Diaphragm Up

When the solenoid is de-energized, the armature drops down, closing the diaphragm main orifice. Water continues to flow through the diaphragm bleed orifice, equalizing the pressure and allowing the spring to push the diaphragm down against the valve seat.

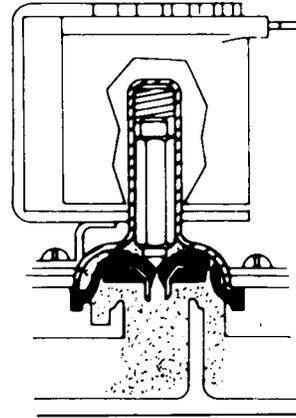


Figure
Water Valve-Closing

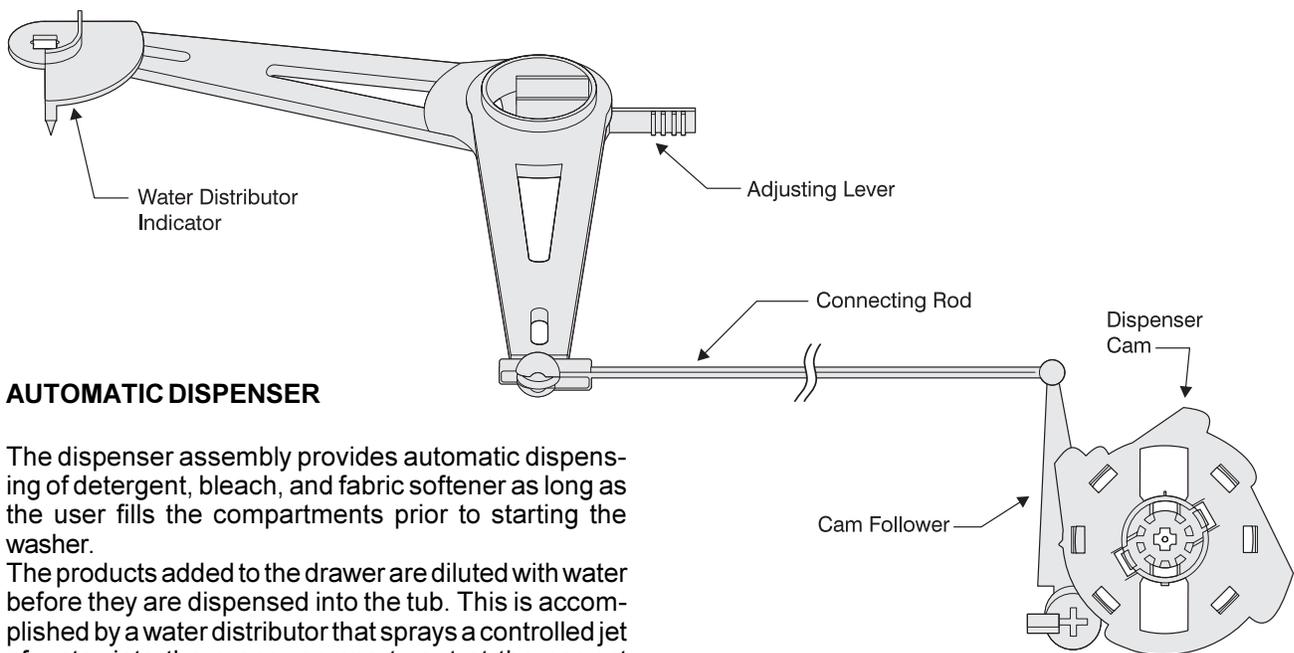
To Test Water Valve:

1. Disconnect the washer from electrical supply.
2. Make a continuity check of the valve harness to determine whether or not a circuit exists.
3. Use an ohmmeter. Resistance of the solenoid should be approximately 880 ohms $\pm 10\%$ @ 77°F.
4. If harness and solenoid test OK, simulate a normal valve operation by testing solenoid coil, using a separate 115 volt power source directly, with a properly fused and grounded service cord.
5. If water valve operates on both solenoids, check timer, water level control, and water temperature selector switch circuits. If water valve fails to operate, check valve inlet screens for debris and/or replace water valve.

To Remove or Replace Water Valve:

The water valve is mounted on the cabinet at the left rear of the washer. The valve may be replaced by removing either the top or rear service panel.

1. Disconnect washer from electrical supply and turn off the water supply.
2. Remove hot and cold fill hoses from water valve.
3. Remove top or rear service panel.
4. Remove two screws securing water valve to cabinet brace.
5. Remove the wiring harness connector plugs.
6. Remove clamp securing water valve to air gap hose.
7. Reverse procedure to install the new water valve. Check for operation.



AUTOMATIC DISPENSER

The dispenser assembly provides automatic dispensing of detergent, bleach, and fabric softener as long as the user fills the compartments prior to starting the washer.

The products added to the drawer are diluted with water before they are dispensed into the tub. This is accomplished by a water distributor that sprays a controlled jet of water into the proper compartment at the correct time. The water distributor movement is controlled by a cam located on the timer shaft. A cam follower "reads" this information and transmits the movement to the water distributor with the aid of a plastic rod and an "L" shaped arm.

The dispenser drawer also houses a magnet that is used to actuate a small magnetic reed switch mounted on the console. This switch is used to stop the washer operation if the dispenser drawer is opened more than 1 inch (approx.).

To Remove or Repair Dispenser Drawer:

1. Remove the drawer by first sliding the safety latch to the right, then pulling the drawer out until it stops.
2. Reach back to the left rear corner of the drawer cavity and press down firmly on the lock tab (left rear portion of the drawer). Pull out the drawer.
3. The drawer front can be removed from the drawer by carefully disengaging the three locking tabs to

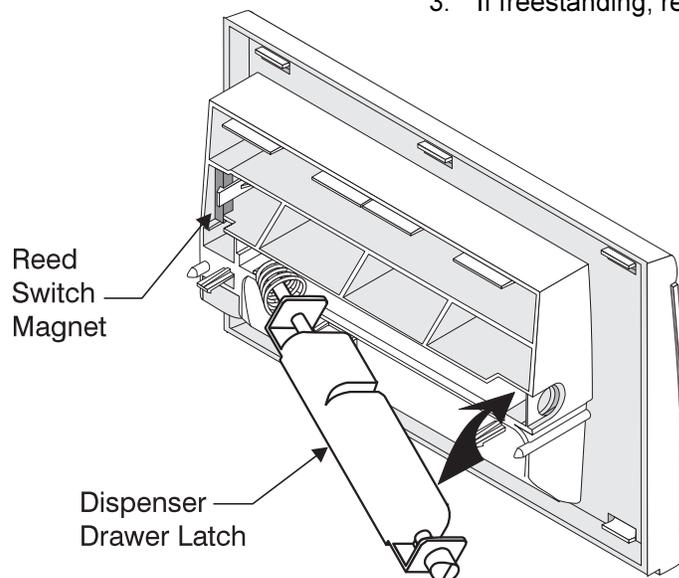
release.

NOTE: If the drawer front is being replaced, remember to transfer the small magnet to the new drawer front. This magnet operates the reed switch and the washer will not operate without it. Pry magnet out using a small screwdriver

4. To remove the drawer latch, slide the latch handle all the way to the left to compress the latch spring and pull the latch handle from the drawer front.
5. To remove or replace drawer trim, disengage trim lower mounting tabs from drawer first, then remove from upper slots.

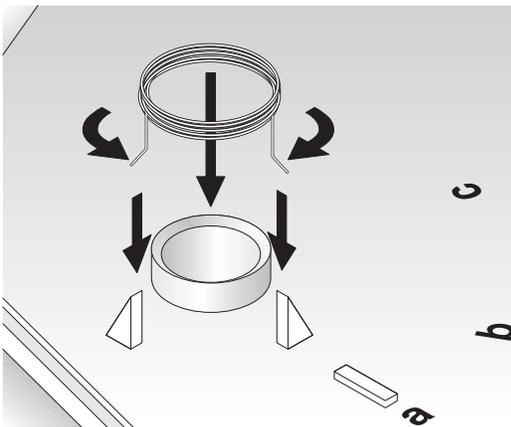
To Remove or Replace Dispenser Linkage:

1. Disconnect the washer from electrical supply.
2. If dryer is stacked on washer, remove clothes dryer from top of washer.
3. If freestanding, remove the top panel and the top



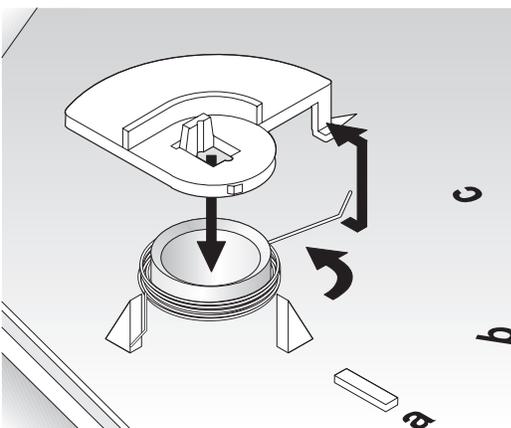
panel front mounting brackets.

4. Remove screws (6) securing the control panel. Five of the screws are located on the rear of the control panel and one screw is on the front side, located behind the bottom left corner of the fabric dispenser drawer.
5. Remove indicator lamp and reed switch from control panel by prying gently with a small screwdriver, being careful not to distort or damage control panel securement tabs.
6. Remove the long dispenser connecting rod by pulling gently at each end to remove.
7. Remove cam follower at timer by turning phillips head fastener counter clockwise about 1/8 turn, and pull to release.
8. Remove pivoting arm on dispenser by depressing catch and pulling up on arm.
9. Remove water distributor by prying catch out slightly with small screwdriver while lifting up.
10. To reassemble, use the triangular projections to preload the spring before installing. Place the spring on the rear projection then wind spring 3/4 turn and hook on small projection.
11. Next install water distributor by inserting hand into



the dispenser shell and hold water distributor in place while pressing top portion into place. Water distributor shaft is keyed and will only fit in one position.

12. Release spring off front (smaller) projection to put

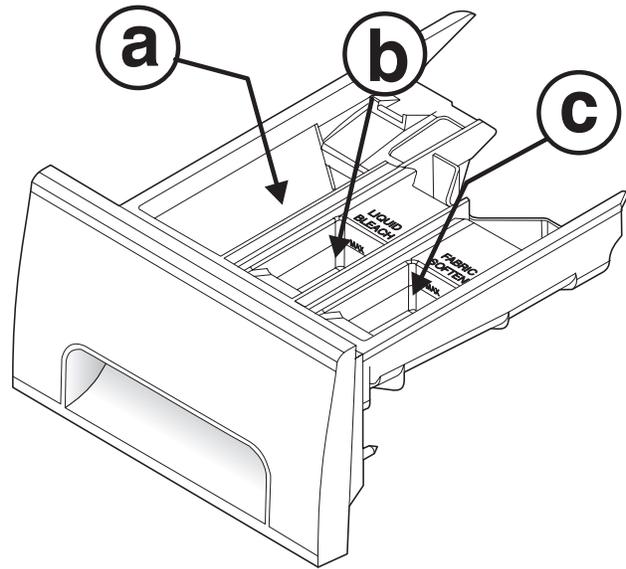


tension on cam follower.

13. The "a", "b", "c", notations on the dispenser housing refer to:

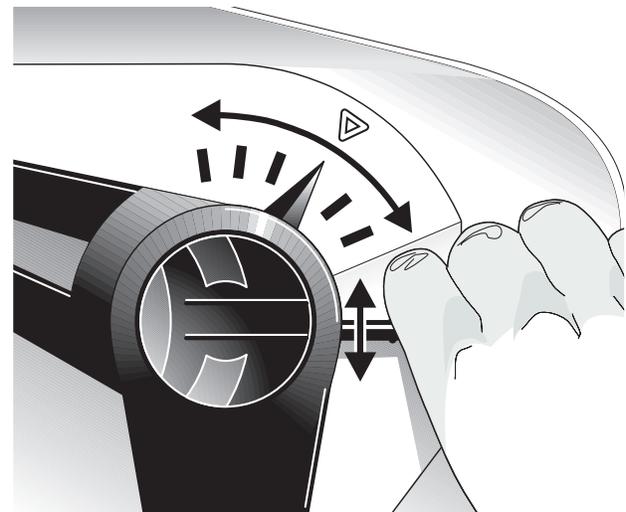
- a = detergent chamber
- b = bleach chamber
- c = fabric softener chamber

The eccentric pointer should stop in the middle of



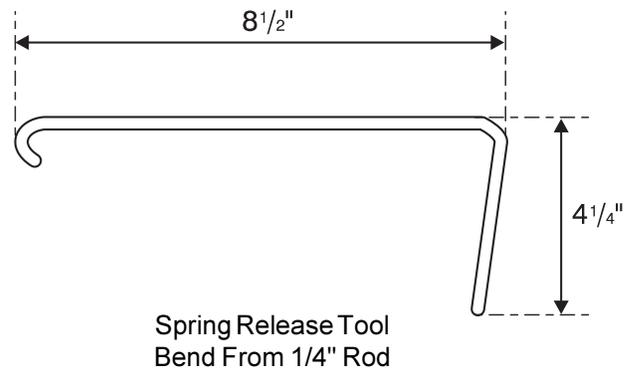
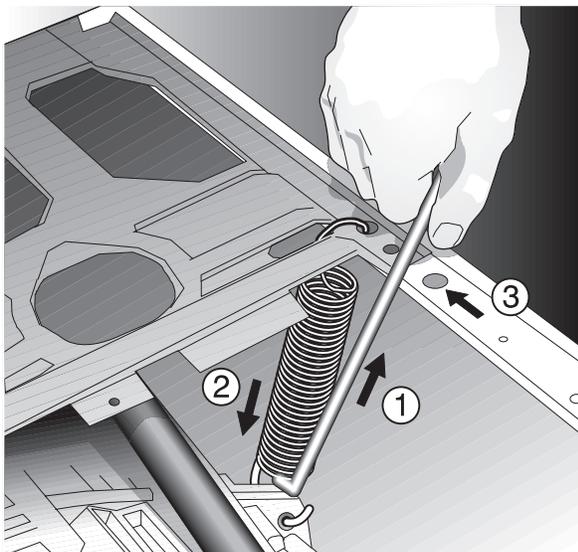
each chamber's bandwidth. If this is not possible, center the pointer to areas "b" and "c", at the expense of area "a" using the adjusting lever beside center of pivoting arm.

To Remove or Replace Automatic Dispenser



Assembly:

1. Disconnect the washer from electrical supply.
2. If dryer is stacked on washer, remove clothes dryer from top of washer.
3. If freestanding, remove the top panel and the top panel front mounting brackets.
4. Remove screws (6) securing the control panel. Five of the screws are located on the rear of the control panel and one screw is on the front side, located behind the bottom left corner of the fabric dispenser drawer.
5. Remove indicator lamp and reed switch from control panel by prying gently with a small screwdriver, being careful not to distort or damage control panel securement tabs.
6. Remove the long dispenser connecting rod by pulling gently at each end to remove.
7. Remove pivoting arm on dispenser by depressing catch and pulling up on arm.
8. Remove the suspension spring retainers and re-install the rear screws without the spring retainer. This will hold the control mounting panel down when the springs are lifted. Unhook tub support springs and move them to the next large hole back on the side panel flange. The springs may be removed by grasping the tub assembly on the lower tub reinforcement area and lifting (4:00 and 7:00 position approx.) while guiding the top end of the spring with the other hand to the new location. Or a simple tool may be bent from $\frac{1}{4}$ " round rod that will simplify this task. Use the tool to hook the bottom of the spring and lift to remove.
9. Remove screws (3) from dispenser assembly, two



- at rear and one on front.
10. Push to release catches on upper front corners of dispenser assembly and push dispenser rearward slightly.
11. Remove screws that were re-installed at rear of control mounting panel to remove springs and lift control mounting panel from cabinet. Pivot control mounting panel away from dispenser to gain access to dispenser. It may be necessary to remove the water level control for greater mobility if sufficient clearance cannot be obtained.
12. Remove bellows from lip of front panel.
13. Remove screws (2) from fill spout above door hinge.
14. Remove drip tray from dispenser assembly.
15. Disconnect vent hose from right side of dispenser assembly by pulling to remove.
16. Remove fill hoses from rear of dispenser.
17. Remove one of the clamps from rubber connector securing dispenser to fill nozzle.
18. Reverse procedure to reassemble.

DRIVE MOTOR

The drive motor is a 120 volt, reversible, variable speed, 16 pole, D.C. motor coupled with an electronic speed control unit and timer. The motor drives the tub drive pulley with a 6 rib Poly-V belt.

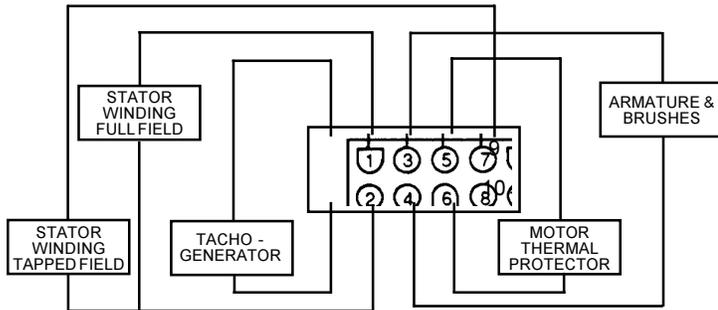
To Test Drive Motor:

The drive motor can be tested from the rear by using an ohmmeter (with the power disconnected and the rear panel removed). Remove the motor connector shield. Disconnect the wiring harness connector block. All resistances have a tolerance of $\pm 10\%$ @ 77°F .

1. Check resistance of stator (field) windings between

terminals 3 and 4. Resistance should be 0.37 ohms. See motor diagram below.

2. Check resistance of armature (rotor) windings be-



tween terminals 5 and 6. Resistance value should be less than 5 ohms (the wide range of resistance is due to measuring through the brushes of the motor.)

3. Check resistance of tachogenerator between terminals 1 and 2. Resistance value should be 135 ohms.
4. Check the continuity of the motor protector between terminals 7 and 8. Resistance should be less than 1 ohm.

To Remove or Replace the Drive Motor

1. Disconnect washer from electrical supply.

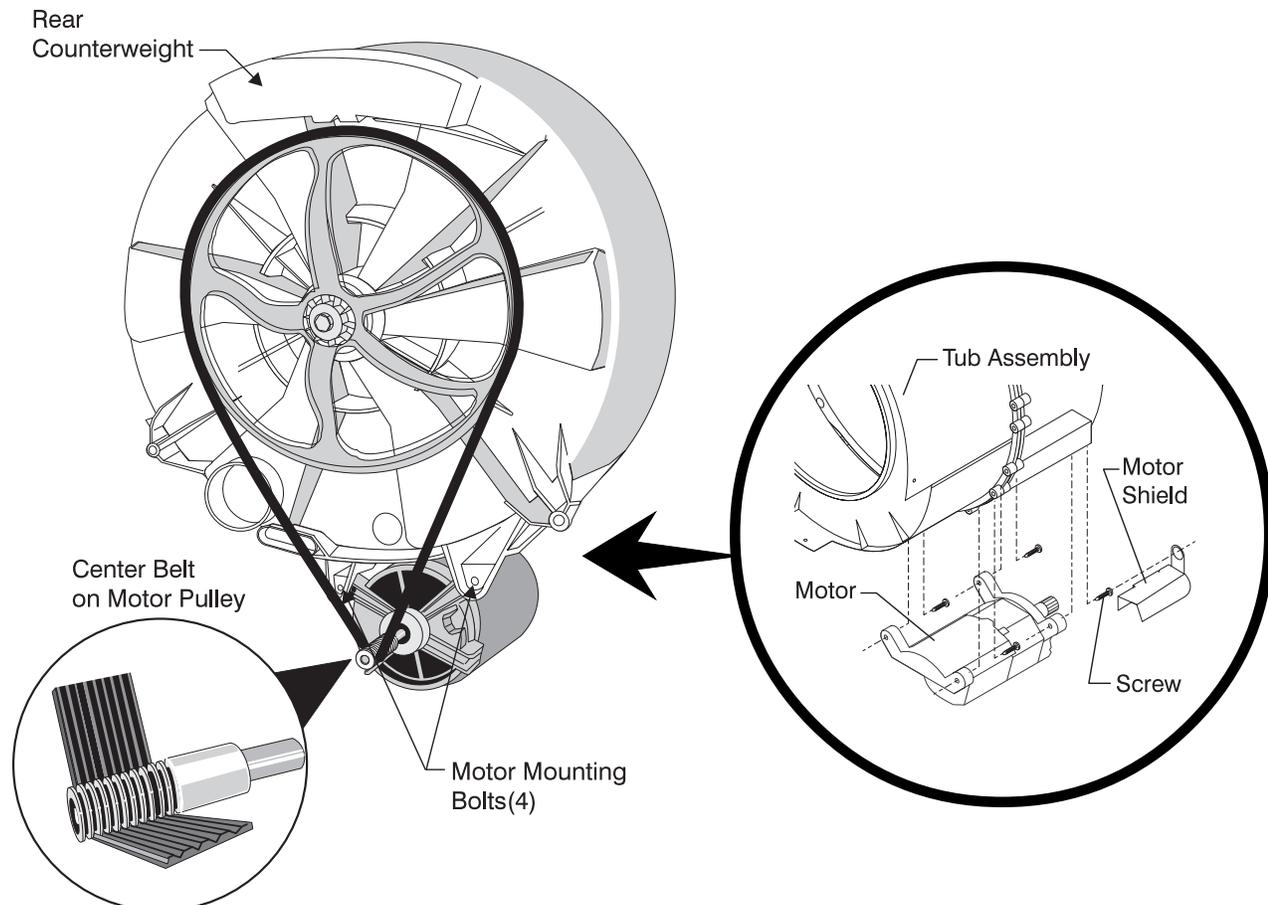
2. Remove rear service panel.
3. Remove belt by turning tub drive pulley and rolling belt off pulley. The belt is elastic and is designed to "give" enough to remove and install in this manner.
4. Remove one screw to take off the motor connector shield.
5. Disconnect the wiring harness connector block and ground wire.
6. Remove motor mounting bolts (4).
7. Slide motor to front while supporting to remove.
8. Reverse procedure to reinstall, making sure that belt tracks in the center of the tub pulley. Adjust by moving belt on motor pulley if required.

DRIVE BELT

The drive belt (6 rib flat Poly-V) is used to transmit power from the motor pulley to the tub. The belt is constructed of a material that stretches, which makes belt tension adjustments unnecessary.

To Remove or Replace the Drive Belt

1. Disconnect washer from electrical supply.
2. Remove rear service panel.
3. Remove belt by turning tub drive pulley and rolling belt off pulley. The belt is elastic and is designed to "give" enough to remove and install in this manner.
4. Reverse procedure to reinstall, making sure that belt



tracks in the center of the tub pulley. Adjust tracking, if required, by moving belt on motor pulley.

ELECTRONIC SPEED CONTROL

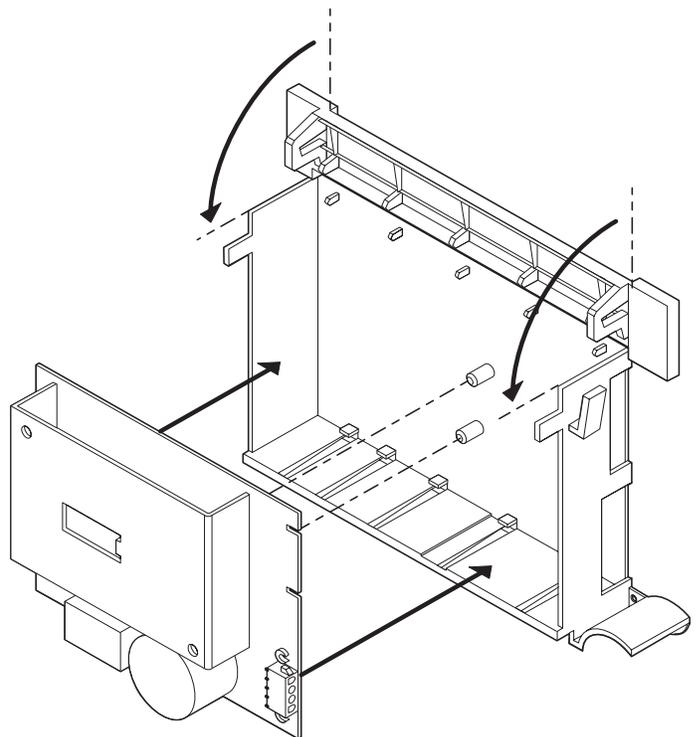
The Electronic Speed Control monitors a tachogenerator built into the DC drive motor. Its purpose is to control the motor (tub) RPM during the wash and spin cycles. The speed control is mounted on the base at right rear.

The Electronic Speed Control serves the following functions:

1. Converts AC voltage to DC voltage for use by the drive motor.
2. Maintains spin basket speeds during wash (52 RPM) and spin (850 RPM max.) by monitoring the drive motor tachogenerator output, and then varying the DC voltage output to the drive motor to regulate the spin basket speed independently of load size.
3. Provides initial speed ramps to prevent excessive machine vibrations and/or cabinet walking.
4. Redistributes unbalanced loads until corrected and/or desired speeds are achieved.

To Remove or Replace Electronic Speed Control:

1. Disconnect washer from electrical supply.
2. The electronic speed controller may be removed from either the front or rear of the washer, the rear being a little easier if access to the washer is not restricted.
3. If easily accessible, remove rear service panel, go to step 5. If rear service panel is not easily accessed, as in a stacked or undercounter installation, go to step 4.
4. Remove lower front access panel.
5. Remove two screws securing speed control housing to base, and pull housing up to disengage housing locating pins from base.
6. Remove wiring to the electronic speed control.
7. Unsnap catch on speed control housing to release speed control board.
8. Install new motor speed controller, making sure that the edge connector terminals are touching the silver contact area, and reverse procedure to reassemble.



DRAIN PUMP AND MOTOR ASSEMBLY

The pump system consists of an AC motor and pump assembly, a bellows type sump hose, air bell, and an external cabinet drain hose.

The drain pump and motor assembly is mounted on the base at the right front corner of the cabinet.

When the wash or rinse cycle is completed, the timer energizes the pump motor to remove water from the tub. The pump motor remains in operation throughout the spin cycle.

To Test Drain Pump Motor Windings:

1. Disconnect the washer from electrical supply.
2. Remove front access panel from washer.
3. Disconnect harness plug from pump motor.
4. Check resistance of motor windings. Resistance should be approximately 4.8 ohms $\pm 10\%$ @ 77°F.

To Remove or Replace Drain Pump Motor:

1. Disconnect the washer from electrical supply.
2. Remove front access panel from washer.
3. Remove bolts (2) securing motor cover to pump.
4. Disconnect electrical harness plug from pump motor.
5. Remove clamp securing sump hose to pump.
6. Remove clamp securing exterior drain hose to pump.

7. Remove two hex head screws securing the drain motor and pump assembly to cabinet base.
8. Reverse procedure to install new drain motor and pump assembly.

AIR BELL AND PRESSURE CONNECTING TUBE

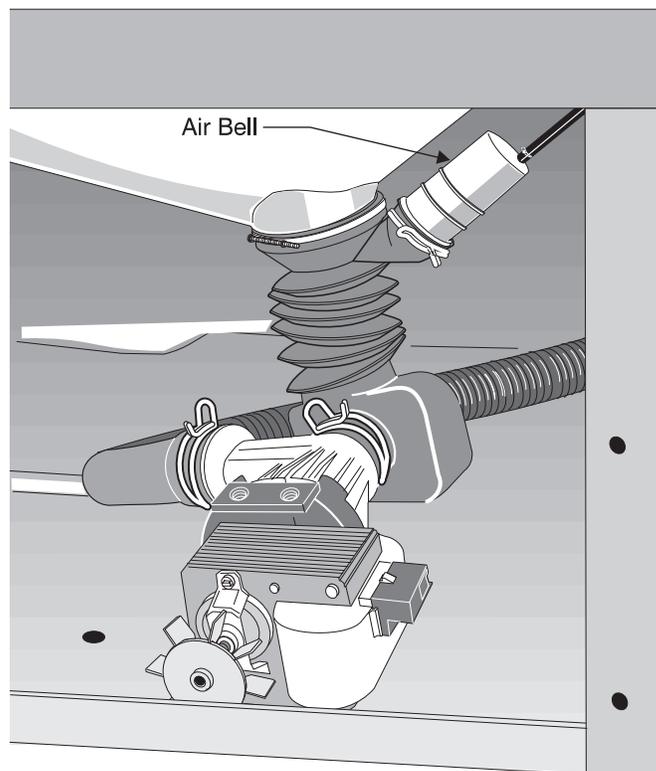
In order to provide enough air pressure to activate the water level control switch, a large volume of air must be compressed and transferred to the water level control. This is accomplished by using an air bell and black rubber tubing.

The air stored in the air bell is compressed by the weight of the water in the tub. The resulting pressure is then transferred to the water level control through the black rubber tubing.

To Remove or Replace Air Bell:

1. Disconnect washer from electrical supply.
2. Remove two screws securing the front service panel.
3. Remove the service panel by pulling down.
4. Remove drain hose from drain and empty any remaining water in hose. Use a large pot or pan.
5. Remove clamp securing air bell to sump hose and remove connecting tube from air bell.
6. Install new air bell and connecting tube.
7. Reverse procedure to reassemble.

NOTE: Seal air connecting tube to air bell and air bell to sump hose using waterproof glue. DO NOT plug connecting tube opening.



TUB COUNTERWEIGHTS

To Remove or Replace Rear Counterweight:

1. Disconnect the washer from electrical supply.
2. Remove rear access panel from washer.
3. Remove locking nuts (2), washers, and reinforcement plates from bolts securing weights.
4. Reverse procedure to reassemble.

To Remove or Replace Front Counterweights:

To access the front counterweights, remove the complete outer tub assembly first. Reference "To Remove or Replace Outer or Inner Tub" under "OUTER TUB" section and complete steps 1 - 23 to gain access to front counterweight mounting bolts.

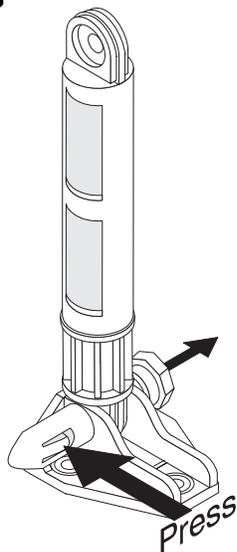
AIR SHOCK ABSORBER

To Remove or Replace Air Shock Absorber:

Air shock absorbers may be removed or replaced from the front of the washer if access to the rear of the washer is restricted or the dryer is stacked above the washer.

1. Disconnect the washer from electrical supply.
2. Remove rear access panel from washer.
3. Remove air shock securement pins by depressing locking tab while pulling pin to remove. This procedure is much easier if a deep 1/2", 6 point socket (or 13 millimeter, 6 point) is used to compress the locking tab of the plastic pin. Push the socket onto the tapered end of the pin as far as it will go to compress the locking tab.
4. Use pliers to grasp head of pin and pull to remove. As the pin is removed the socket will drop free.
5. When replacing the air shock make sure to position it with the bell end is facing downward.
6. Lubricate the securement pins with Sil-Glide® before installing.

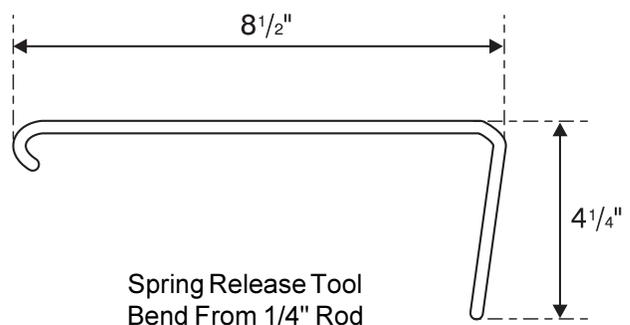
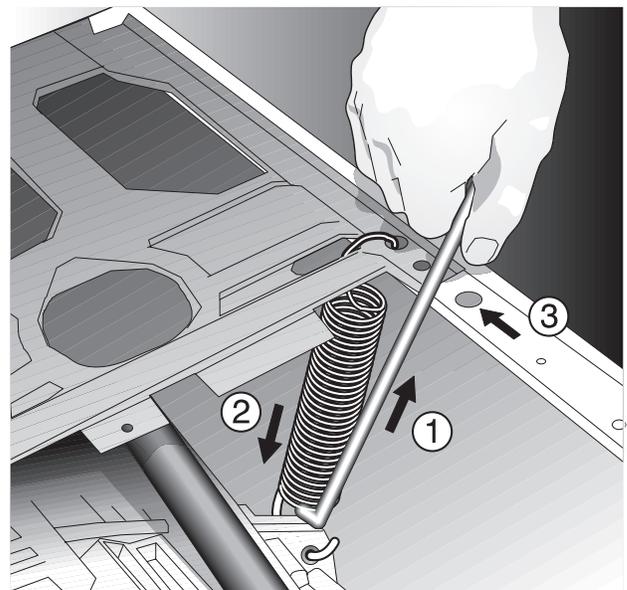
DOOR BELLOWS



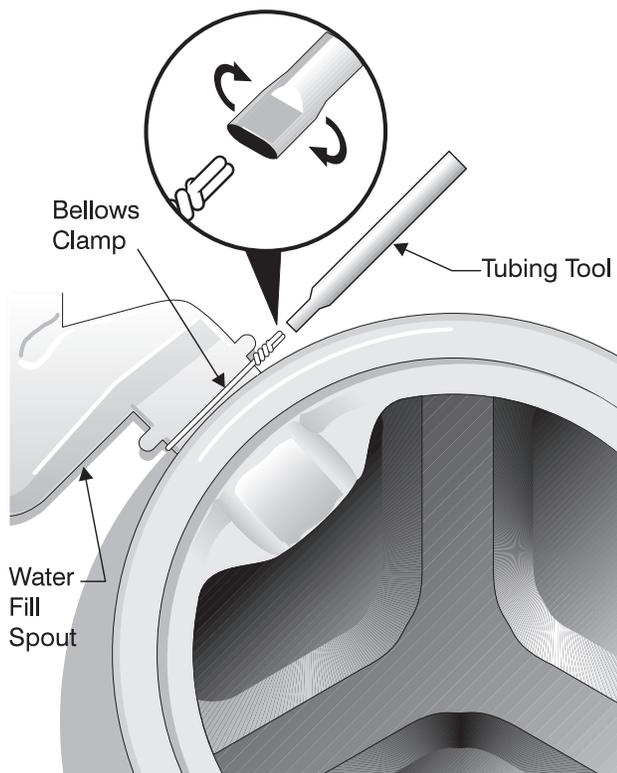
To Remove or Replace Bellows

NOTE: To have better access to the bellows than this procedure provides, remove the complete outer tub assembly first. If this optional method is preferred, reference "To Remove or Replace Outer or Inner Tub" under "OUTER TUB" section and complete steps 1 - 23, then begin at step 12 below.

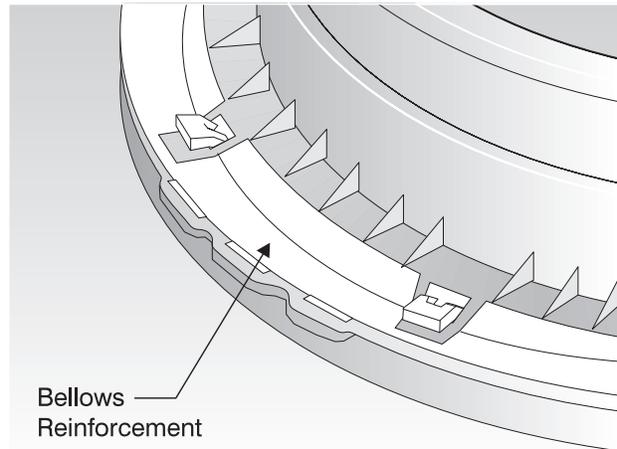
1. Disconnect the washer from electrical supply.
2. If dryer is stacked on washer, remove clothes dryer from top of washer.
3. If undercounter installation, remove the top panel.
4. Remove door from hinge for better access.
5. Remove the spring retainers and re-install the rear screws without the spring retainer. This will hold the control mounting panel down when the springs are lifted. Unhook tub support springs and move them to the next large hole back on the side panel flange. The springs may be removed by grasping the tub assembly on the lower tub reinforcement area and lifting (4:00 and 7:00 position approx.) while guiding the top end of the spring with the other hand to the new location. Or a simple tool may be bent from 1/4" round rod that will simplify this task. Use the tool to hook the bottom of the spring and lift to remove.
6. Remove fill spout mounting screws from front panel.



7. Remove screws (6) securing the control panel. Five of the screws are located on the rear of the control panel and one screw is on the front side, located behind the bottom left corner of the fabric dispenser drawer.
8. Remove indicator lamp and reed switch from control panel by prying gently with a small screwdriver, being careful not to distort or damage control panel securement tabs.
9. Remove the long dispenser connecting rod by pulling gently at each end to remove.
10. Remove pivoting arm on dispenser by depressing catch and pulling up on arm.
11. Remove screws (3) from dispenser assembly, two at rear and one on front. Release dispenser mounting tabs and push dispenser rearward to clear front opening. After dispenser assembly has cleared the front opening, push dispenser assembly down as far as possible.
12. Pull outer lip of bellows from front panel (glued in spots). Remove wire clamp securing bellows to fill spout. Removing and installing the fill spout clamp will be a great deal easier if a simple tool is constructed from a scrap piece of tubing. Partially squeeze one end of a short piece of 3/8" or 1/2" O.D. tubing. Slip the collapsed end of tubing over the twisted ends of the clamp and rotate the tool one full turn to unlock the clamp. If tool is hard to turn, wrap with friction tape or duct tape to improve grip.
13. Remove bellows, reinforcement, and retaining spring by pulling loose.



14. Install bellows reinforcement on new bellows.
15. Lubricate groove in replacement bellows with a liberal application of liquid soap.



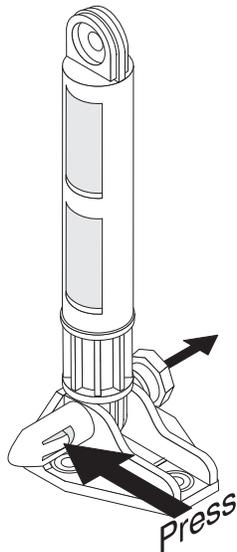
16. Install bellows by using a turning motion starting at the top of the tub. At the same time apply pressure to prevent the portion of the bellows already engaged in the groove from popping out.
17. Once bellows is fully engaged in its mounting groove, rotate to the proper location by lining up the pointer (on bellows) with the 12:00 position on the outer tub.
18. Install bellows retaining spring. This is done by slipping the spring in the groove at the bottom of the outer tub opening first. Stretch the spring while guiding it into the groove all the way around the tub opening and work toward top.
19. Insert fill spout into the bellows. Reinstall wire clamp on fill nozzle using tubing tool to twist clamp. Make certain fill spout is pulled down as far as possible which will aid in reinstalling clamp.
20. Reverse procedure to reassemble.

OUTERTUB

To Remove or Replace Outer or Inner Tub

1. Disconnect the washer from electrical supply.
2. If dryer is stacked on washer, remove clothes dryer from top of washer.
3. If freestanding or undercounter installation, remove the top panel.
4. Shut off water supply and disconnect water supply hoses from water valve.
5. Remove rear access panel from washer.
6. Disconnect the motor wiring harness connector block and ground wire. Remove wire tie to free harness from tub.
7. Remove pressure fill tube from water level control.
8. Remove the front access panel.
9. Loosen clamp securing sump hose from tub and

- remove bellows style hose from tub.
- Remove wire spring clamp from air bell.
 - Remove air shock upper securement pins by depressing locking tab while pulling pin to remove. This procedure is much easier if a deep 1/2", 6 point socket (or 13 millimeter, 6 point) is used to compress the locking tab of the plastic pin. Push the socket onto the tapered end of the pin as far as it will go to compress the locking tab. Use pliers to grasp head of pin and pull to remove. As the pin is removed the socket will drop free.
 - Pull upper end of air shocks free from tub and position shocks upright away from tub for clear-



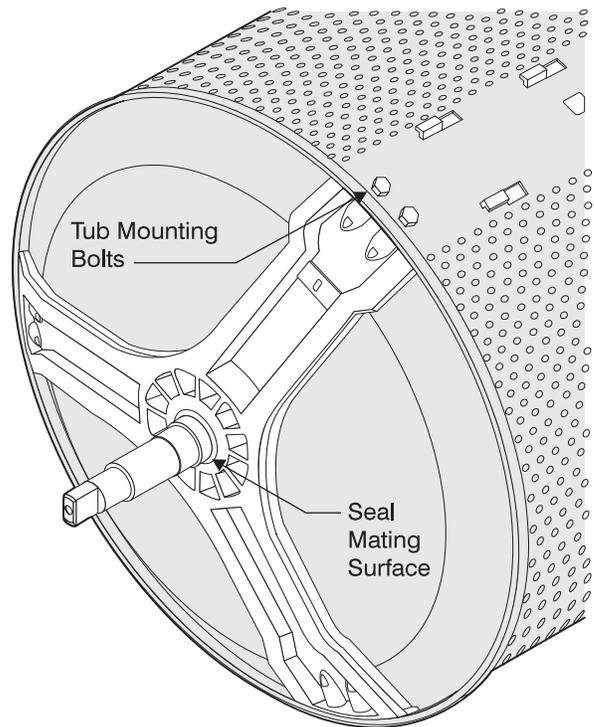
- ance.
- Protect floor and carefully lay washer on its back.
 - Remove fill spout mounting screws from front panel.
 - Pull outer lip of bellows from flange on front panel.
 - Remove one screw of the suspension spring retaining strap and loosen the other one. Pivot strap out of the way to permit access to spring. Remove suspension springs from washer cabinet and then from outer tub. **NOTE:** Green end of spring connects to cabinet.
 - Carefully lift cabinet to clear tub assembly and set aside. Automatic dispenser will remain connected to tub assembly.
 - Reverse procedure to reassemble.

INNER TUB AND BEARINGS

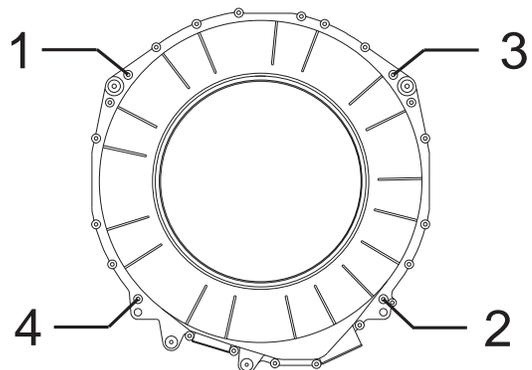
To Remove or Replace Inner Tub or Bearings:

- Remove outer tub assembly. See "To Remove or Replace Outer or Inner Tub" under "OUTER TUB" section and complete steps 1 - 23.
- Remove the screws (23) securing the outer tub halves together. Rotate tub assembly so that front opening is face down.

- Remove belt by turning tub drive pulley and rolling belt off pulley. The belt is elastic and is designed to "give" enough to remove and install in this manner.
- Remove pulley from tub shaft.
- Remove rear motor mounting screws.
- Separate outer tub halves. **CAUTION:** Use caution in handling the inner tub, the outer surface is very sharp! The replacement rear outer tub comes with new bearings, water seal, and seal between halves already installed.
- Remove the inner tub from the tub support by removing the bolts (6) securing the three legs. When reassembling, torque bolts to 24 ft. lbs.
- Reverse procedure to reassemble using illustration



below to show outer tub screw tightening sequence. After these four, any sequence OK. Torque to 75 - 85 in. lbs.



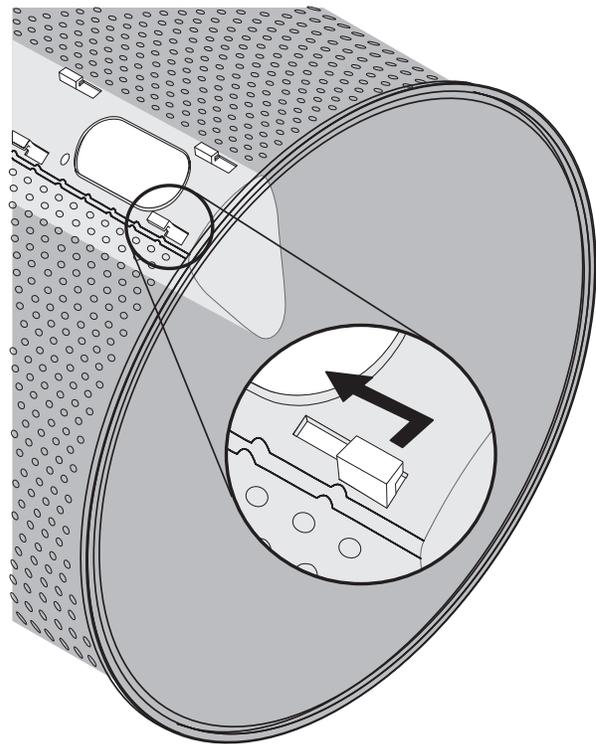
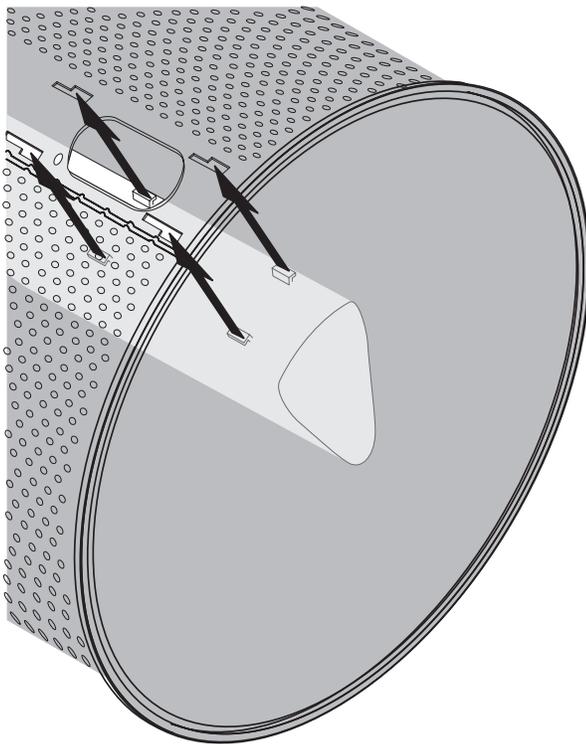
TUB VANES

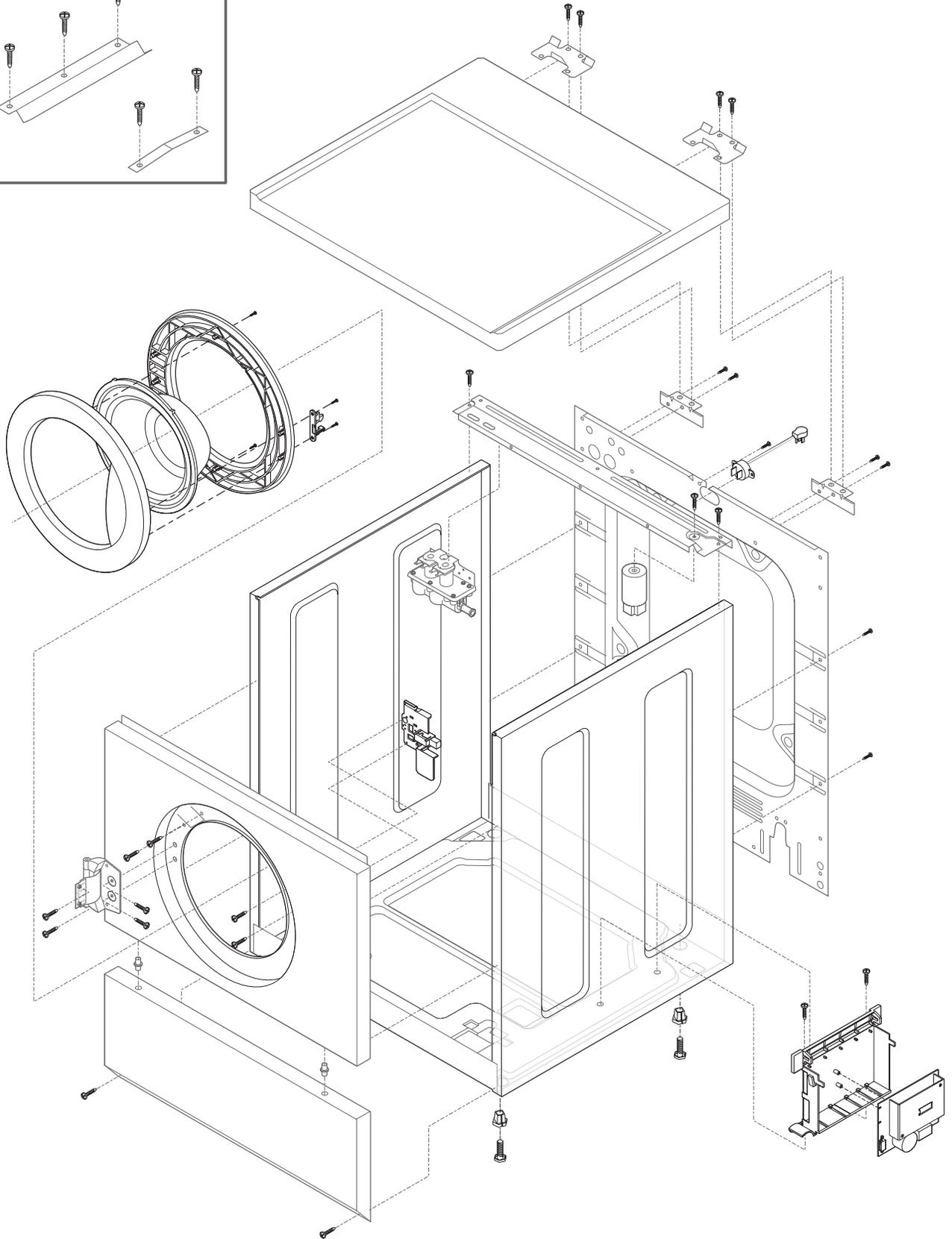
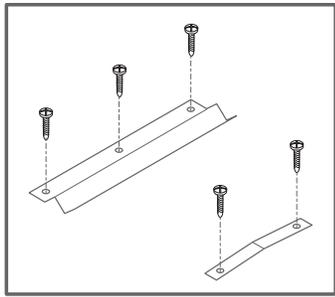
To Remove or Replace Tub Vanes:

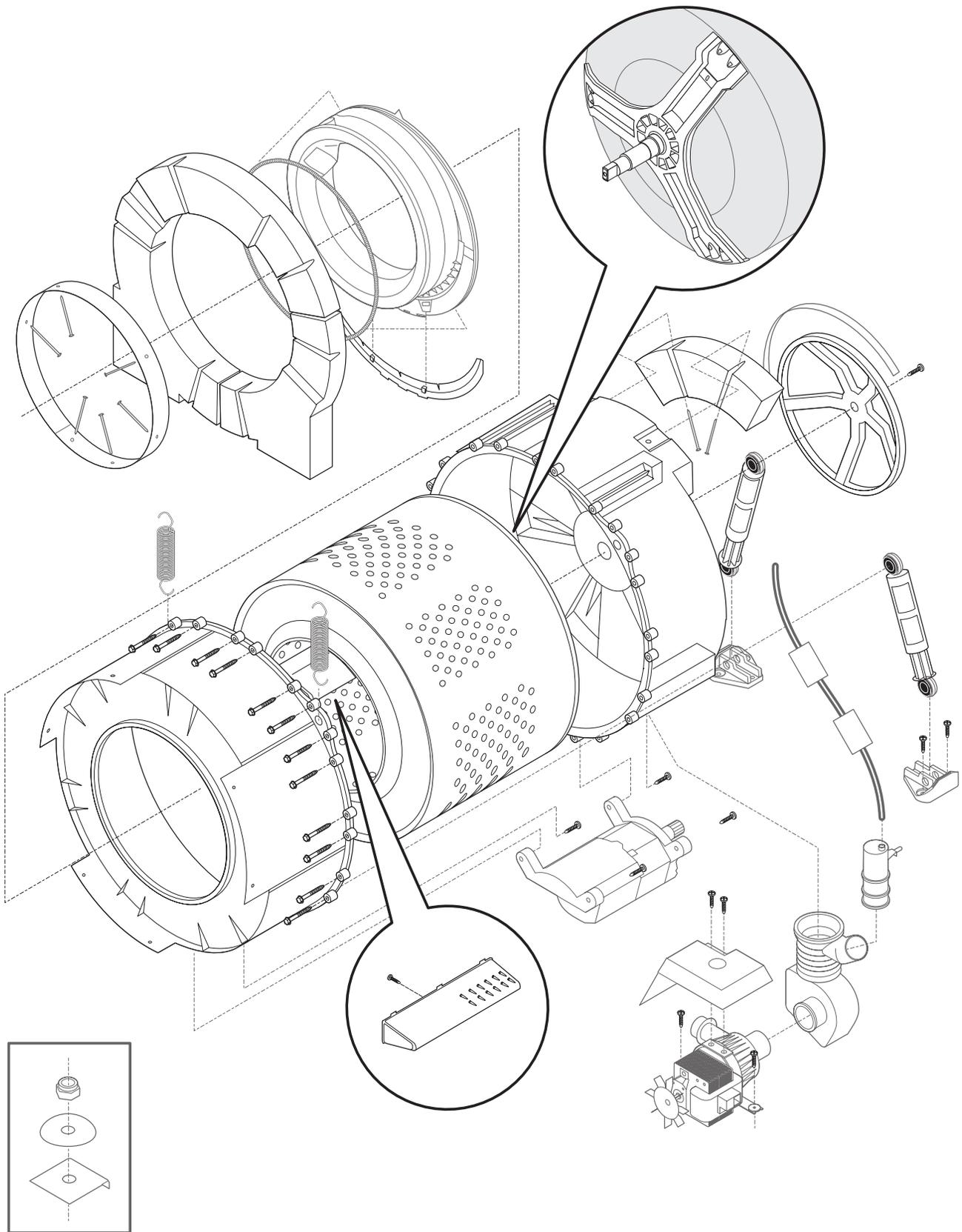
There are three plastic vanes mounted to the tub to aid in the washing action during the wash cycle. Two of the vanes are secured by a screw and a tab bent into place on the tub. To remove these vanes the tub has to be removed. The third vane is secured only by a single screw and may be removed through the door opening.

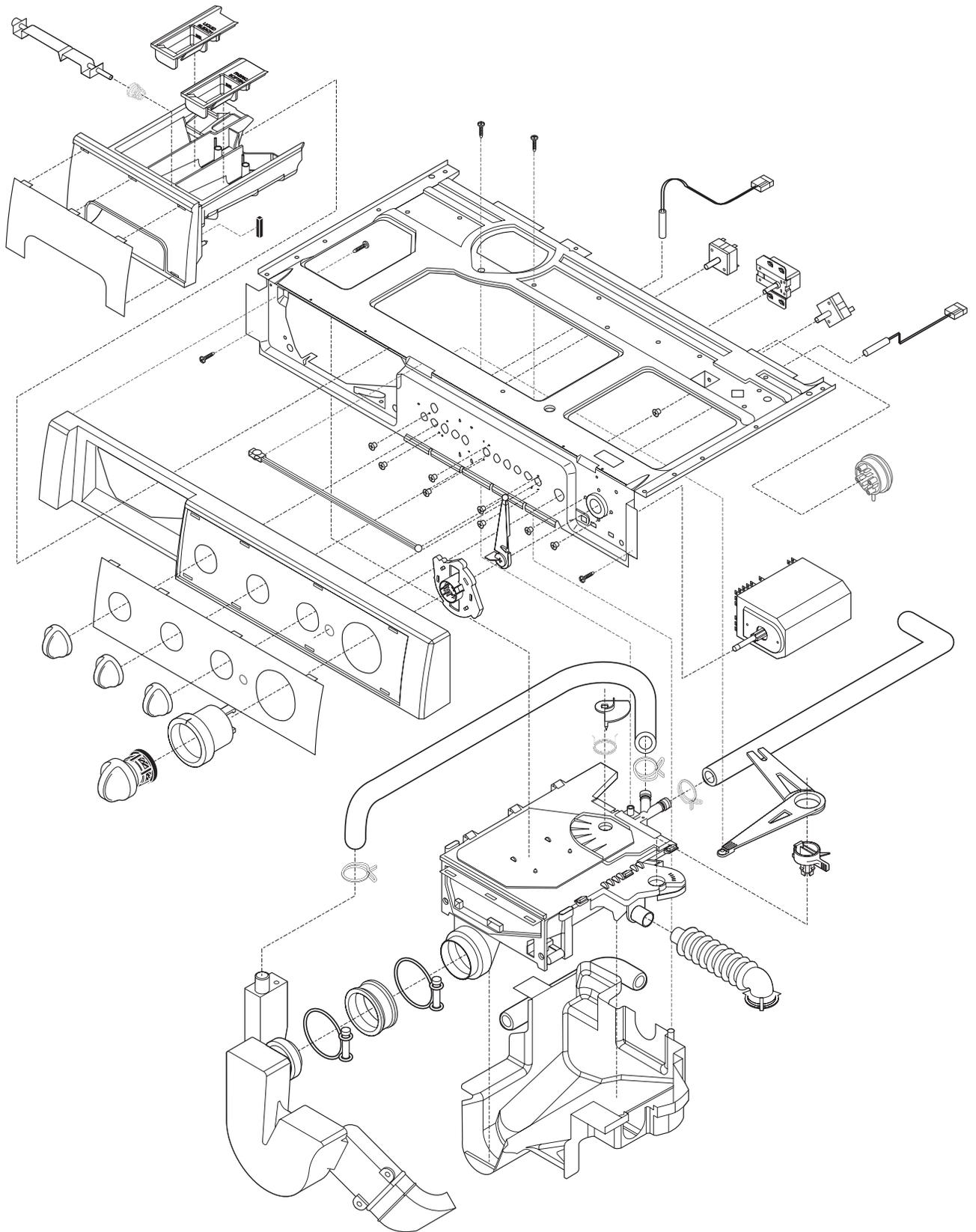
1. Identify the vane that is located **on the seam of the tub** and remove the mounting screw.
2. Slide vane forward toward door opening until it stops.
3. Pull vane upwards to disengage tabs on vane from slots in tub.
4. Reverse procedure to replace. If screw hole on tub

is stripped, drive screw into other hole on vane to secure.

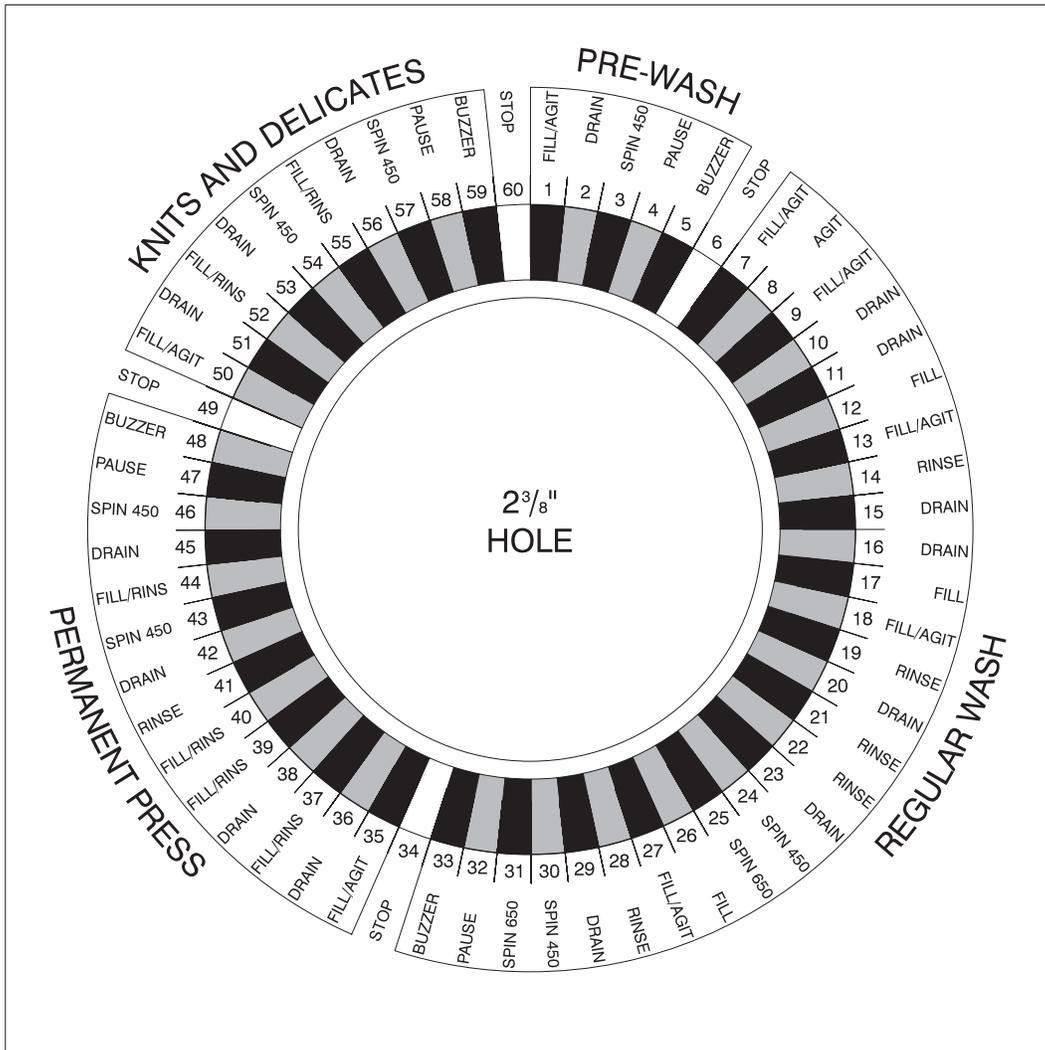








TIMER DIAGNOSTIC AID



Cut Out Center Hole- Place Over Timer Knob and Align With "STOP" Position.

GENERAL  ELECTRIC
PARTS CATALOG

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REF. NO.	PART NO.	PART DESCRIPTION	
0001	31-2819	INSTRUCTION INSTALLATION	1
	31-15364	MANUAL MINI	1
	49-9942	MANUAL USE & CARE	1
0002	WH41X10001	COVER SOFTENER	1
0003	WH41X10003	DRAWER-DISPENSER	1
0004	WH01X10002	PIN	1
0005	WH01X10038	SPRING	1
0006	WH01X10039	LATCH-HANDLE	1
0007	WH01X10005	SPRING	1
0008	WH01X10007	MAGNET	1
0009	WH42X10016	HANDLE & TRIM	1
0010	WD34X10227	TRIM HANDLE	1
0012	WH12X10002	SWITCH-REED	1
0013	WH12X10057	SWITCH - WATER TEMP	1
0014	WH12X10006	BUZZER	1
0015	WH12X10058	SWITCH EXTRA RINSE	1
0016	WH12X10004	LIGHT-PILOT	1
0017	WH12X10003	SWITCH-PRESSURE	1
0018	WH12X10059	TIMER	1
0019	WH02X10006	SCREW TIMER 10-24X.25	1
0020	WH02X10005	SCREW-SW 21.8-32X.15	2
0022	WH02X10004	SCREW-SW 6032X.19-2A (2)	2
0023	WH11X10002	LEVER-CAM	1
0024	WH11X10012	CAM - TIMER	1
0025	WH16X10001	ROD	1
0026	WH02X10007	SCW #8 PAN HD 10-10BX.50	4
0027	WH46X10036	CONTROL PANEL	1
0028	WD34X10228	TRIM CONSOLE	1
0029	WH01X10062	KNOB - ROTARY	3
0030	WH01X10008	KNOB-TIMER ASM	1
0031	WH11X10013	DIAL - TIMER	1
0032	WH41X10007	HOSE-SIPHON/FILL	1
0033	WH01X10011	CLAMP	2
0034	WH01X10010	ARM-PIVOT	1
0035	WH43X10001	DISP-ECCENTRIC	1
0036	WH41X10006	DIS ASY 1,2,3,4,5,35/37	1
0037	WH41X10013	HOSE-TUB	1
0038	WH41X10025	SHIELD DISPENSER	1
0039	WH41X10024	DUCT-FILL	1
0040	WH01X10036	CLAMP	2
0041	WH41X10026	RING-JUNCTION	1
0045	WH01X10037	BUSHING	1
0046	WH46X10023	BRACKET-CONTROLS	1
0048	WH41X10002	COVER BLEACH	1

GENERAL  ELECTRIC
PARTS CATALOG

WASHER

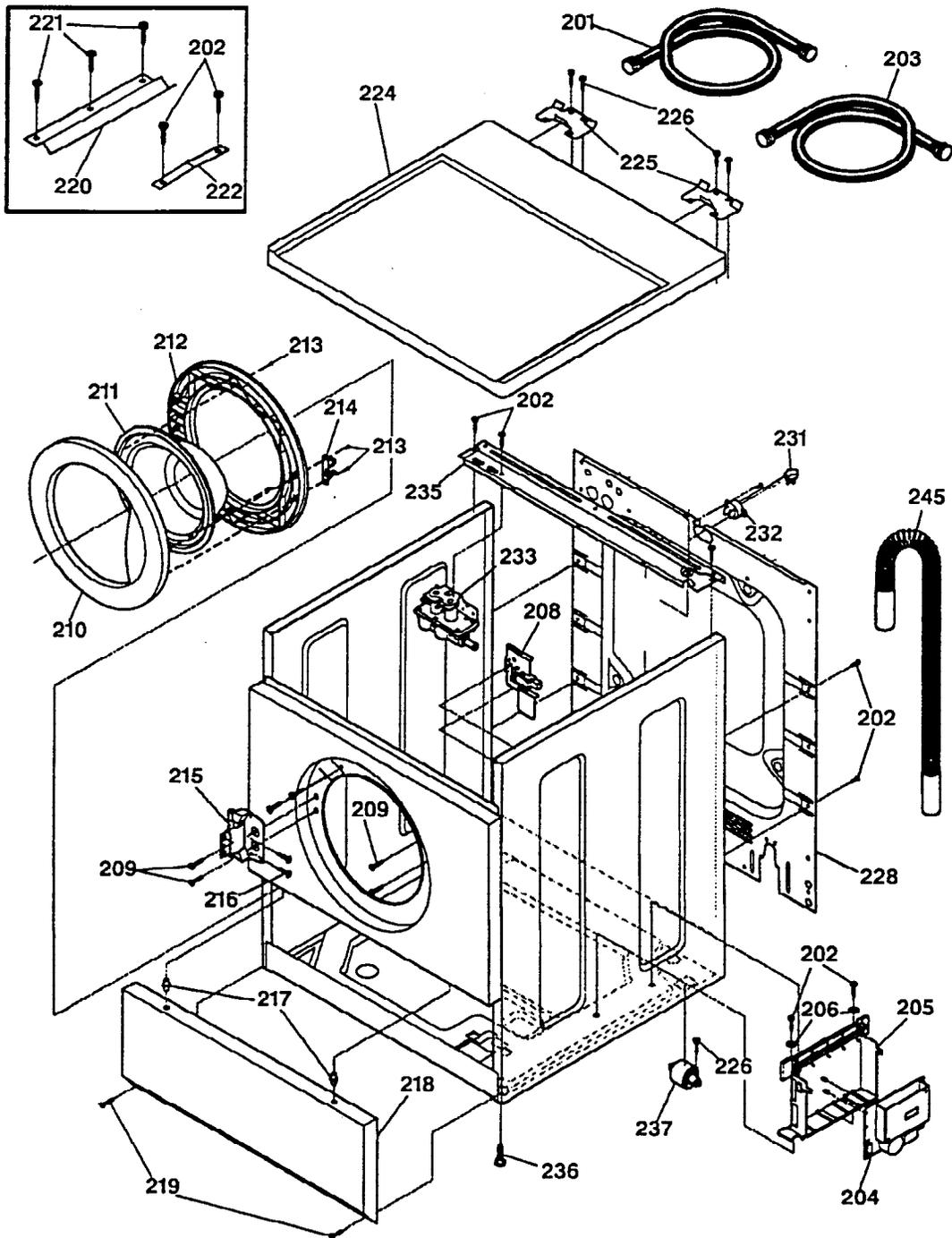
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REF. NO.	PART NO.	PART DESCRIPTION	
0221	WH01X10004	SCREW PAN HD.8-18ABX.375	5

MODEL(S)

WSXH208V0WW

CABINET, DOOR & TOP



(ART NO. WH6254) C2

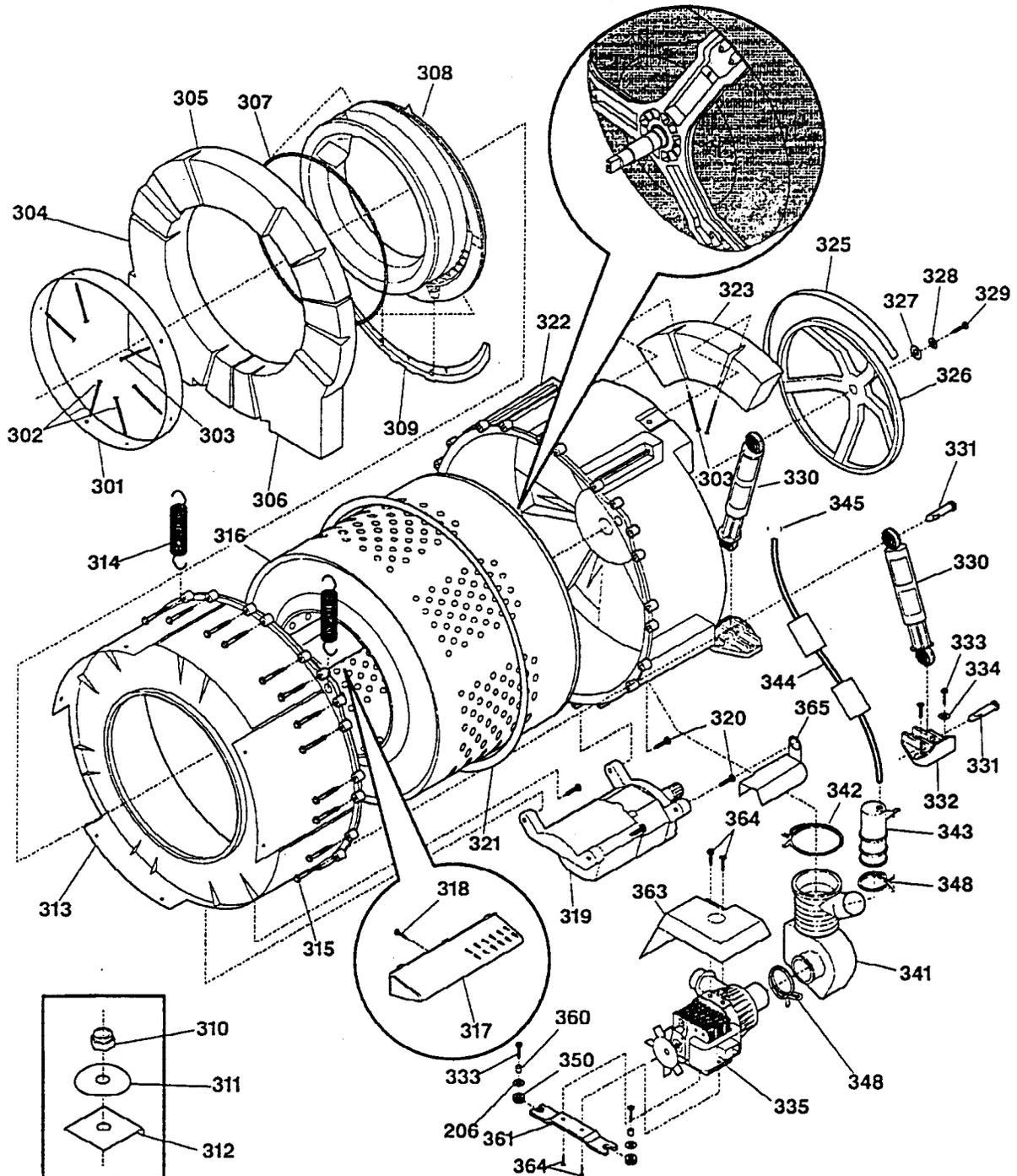
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REF. NO.	PART NO.	PART DESCRIPTION	
0201	WH41X10008	HOSE-INLET COLD	1
0202	WR02X9494	SCREW PANEL TO EVAP	4
0203	WH41X10009	HOSE-INLET HOT	1
0204	WH12X10060	CONTROL - SPEED	1
0205	WH16X10002	BOX-CONTROL	1
0206	WH02X10008	WASHER .21X.71X.06	3
0208	WH10X10001	LOCK-DOOR ASSY	1
0209	WH02X10009	SCREW-LOCK 10-16X.50	1
0210	WH46X10002	DOOR-OUTER	1
0211	WH46X10003	GLASS-DOOR	1
0212	WH46X10004	DOOR-INNER	1
0213	WH02X10010	SCREW, 10-16X.75	2
0214	WH10X10002	CATCH-DOOR	1
0215	WH01X10012	HINGE/BUSHING DOOR	1
0216	WH02X10011	SCREW-HINGE 10-16X.750	1
0217	WH01X10013	PIN-LOCATING	2
0218	WH46X10005	PANEL SERVICE WH	1
0219	WH02X10012	SCREW-PANEL, 8-18X1.125	2
0220	WH16X10003	BRACKET-TOP, FRONT	1
0221	WH01X10004	SCREW PAN HD.8-18ABX.375	5
0222	WH01X10014	RETAINER-SPRING	1
0224	WH44X10001	PANEL TOP WH	1
0225	WH01X10015	HINGE-TOP PANEL	2
0226	WH02X10013	SCREW QUAD PH AB8-18X1/2	5
0228	WH46X10037	PANEL BACK	1
0231	WH19X10001	CORD SERVICE	1
0232	WH01X10016	BUSHING-CORD	1
0233	WH13X0080	VALVE-WATER WH13X80	1
0235	WH16X10023	BRACKET	1
0236	WH01X10003	LEG, PAD/NUT	4
0237	WH02X10015	ROLLER-ASSY.	1
0245	WH41X0378	HOSE-DRIAN, 90"	1

MODEL(S)

WSXH208V0WW

TUB & MOTOR



(ART NO. WH6255) C

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REF. NO.	PART NO.	PART DESCRIPTION	
0206	WH02X10008	WASHER .21X.71X.06	3
0301	WH45X10002	RING-WEIGHT	1
0302	WH02X10017	BOLT 1/4-20X4.5	1
0303	WH02X10018	BOLT 1/4-20X4.05	1
0304	WH01X10019	WEIGHT-LWR. LEFT	1
0305	WH01X10020	WEIGHT-TOP FRONT	1
0306	WH01X10021	WEIGHT-LOWER RIGHT	1
0307	WH08X10001	SPRING-BOOT	1
0308	WH45X10003	BOOT	1
0309	WH45X10004	REINFORCEMENT	1
0310	WH02X10019	NUT	1
0311	WH02X10020	WASHER-SPRING	1
0312	WH16X10007	PLATE-WEIGHT	1
0313	WH45X10005	SHELL-FRONT TUB	1
0314	WH01X10022	SPRING-TUB	2
0315	WH02X10021	SCREW 1/4-10X2.165	1
0316	WH45X10006	TUB-SPIN	1
0317	WH16X10008	VANE	1
0318	WH02X10023	SCREW 10-16X.375	1
0319	WH02X10022	MOTOR ASM	1
0320	WH02X10024	SCREW-MOTOR 12-14X1.50	4
0321	WH08X10002	SEAL-SHELL	1
0322	WH45X10007	SHELL-REAR/BEARING	1
0323	WH01X10023	WEIGHT-REAR TOP	1
0325	WH08X10003	BELT	1
0326	WH07X10001	PULLEY-DRUM	1
0327	WH02X10025	WASHER 41X1.500X.120	1
0328	WH02X10026	WASHER-LOCK 3/8	1
0329	WH02X10027	SCREW-PULLEY M10X.92	1
0330	WH17X10001	LEVEL-SHOCK	2
0331	WH01X10024	PIN-LEVEL	1
0332	WH16X10009	BRACKET-SHOCK	1
0333	WH02X10028	SCREW-BRACKET 10-16X.625	1
0335	WH23X10001	PUMP-DRAIN	1
0341	WH41X10010	TRAP	1
0342	WH02X10029	CLAMP	1
0343	WH41X10011	CHAMBER-AIR	1
0344	WH41X10012	TUBE-PRESSURE	1
0345	WH02X10030	CLAMP	1
0348	WH02X10031	CLAMP-PUMP	1
0350	WH01X2766	GROMMET, PUMP MNTG	1
0360	WH01X2767	SPACER, PUMP MNTG	1
0361	WH16X0524	BRACKET, PUMP MNTG	1
0363	WH16X0523	SHIELD, PUMP	1

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REF. NO.	PART NO.	PART DESCRIPTION	
0364	WH02X1139	SCREW, PUMP/BRK./SHIELD	1
0365	WH41X10023	SHIELD MOTOR CONNECTOR	1