

MAYTAG

Maytag Commercial

MLE/MLG19PD
MLE/MLG19PR

**Stack Laundry
Service Manual**

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GENERAL SAFETY PRECAUTIONS

Information contained in this manual is intended for use by a qualified service technician familiar with proper and safe procedures to be followed when repairing an electrical appliance. All tests and repairs should be performed by a qualified service technician equipped with proper tools and measuring devices. All component replacements should be made by a qualified service technician using only factory approved replacement parts.

Improper assembly or adjustment may occur if service or repair is attempted by persons other than qualified service technicians or if parts other than approved replacement parts are used. Improper assembly or adjustment can create hazardous conditions.

There can be a risk of injury or electrical shock while performing services or repairs. Injury or electrical shock can be serious or even fatal. Consequently, extreme caution should be taken when performing voltage checks on individual components of a product. **PLEASE NOTE:** Except as necessary to perform a particular step in servicing a product, the electrical power supply should **ALWAYS** be disconnected when servicing a product.

Further, this appliance **MUST** be properly grounded. Never plug in or direct-wire an appliance unless it is properly grounded and in accordance with all local and national codes. See installation instructions that accompany the product for grounding this appliance.

USE ONLY GENUINE MAYTAG APPROVED FACTORY REPLACEMENT COMPONENTS.

INTRODUCTION

The information contained in this manual pertains to the service procedures involved in maintaining and/or servicing the Maytag stack washer/dryer MLE/MLG19 model machines. These models are intended for use in commercial laundry facilities.

This manual can be used as a guide to assist in performance evaluation and servicing of the product. As on other washer/dryer models, the importance of proper installation cannot be over emphasized. For additional information, refer to the installation instructions that are supplied with each stack washer/dryer unit.

This manual is divided into five sections covering the stack washer/dryer. Refer to those sections for general information. If additional information is required, contact your commercial distributor.

- Section 1 - Covers general information and electrical test equipment.
- Section 2 - Provides information on the location of components and service procedures. The purpose and functions of specific components will be covered.
- Section 3 - Provides information on programming and set-up procedures.
- Section 4 - Covers general troubleshooting using a list of general complaints.
- Section 5 - Provides specifications and general wiring diagram information.

MODELS COVERED IN THIS MANUAL

**MLE/MLG19PD
MLE/MLG19PR**

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SECTION 1. GENERAL INFORMATION

WASHER PRE-INSTALLATION REQUIREMENTS

NOTE: *Proper installation is the responsibility of the purchaser.*

Checkpoints for proper installation:

- Properly grounded electrical outlet is required. Use 15 amp fuse or comparable circuit breaker for electrical service.
- Standpipe Drain System must be able to accept 1½" O.D. drain hose. Standpipe height of 36" is recommended.

NOTE: *If drain standpipe is in excess of 5 feet above floor level, install pump accessory kit, part number 22002136.*

- These units are not equipped with a siphon break, and the drain hose must be elevated to a minimum height of 24". A 36" high standpipe is recommended. For all installations, the drain hose must be supported by the drain hose strap on the back of the washer.
- Hot and Cold water faucets should be within four (4) feet of the back of the washer. This allows for quick access for immediate shut off of the water.
- Water heater should be set to deliver a minimum of 120° (49°C) hot water to the washer.
- Do not store or operate washer in temperatures below freezing. This can cause damage to the pump, hoses and other components.

- Water pressure of 20 - 120 P.S.I. is required to fill the washer in the appropriate time frame. Pressures of less than 20 P.S.I. may cause an extended or exceptionally long fill time. Refer to the troubleshooting section for more information regarding a solution for slow fill situations.
- Best performance is obtained with the washer installed on a solid floor. Wood floor constructions may need to be reinforced to minimize vibration from unbalanced load situations. Carpets and soft tile surfaces are also contributing factors in vibration and/or movement during the spin cycle. **Never install washer on platform or weak support structure.**

UNCRATING INSTRUCTIONS

NOTE: *The following steps must be performed in the correct order to ease uncrating.*

1. Remove the carton by cutting only marked areas of the carton. **CAUTION:** *Hoses are connected to the washer.*
2. Carefully remove any packaging materials from the outside of the washer. **IMPORTANT:** *DO NOT cut the red straps securing the power cord and inlet hoses at this time.* They will be removed later during installation.
3. Remove the accessory package from inside the tub.
4. Remove the crate bottom from the washer.

WASHER INSTALLATION

1. Two separate red shipping straps are used to secure the machine for shipping purposes and secure the power cord with the water inlet hoses. Removal of the straps must be performed in the following sequence:
 - a. Locate the metal buckles securing the red straps extending through slots in the rear wall of the cabinet. The buckles are positioned in the center of the red straps. Carefully cut the red straps, completely removing the metal buckles. **NOTE: Cut the straps as close to the buckles as possible.** Discard the metal buckles (*Figure 1-1*).

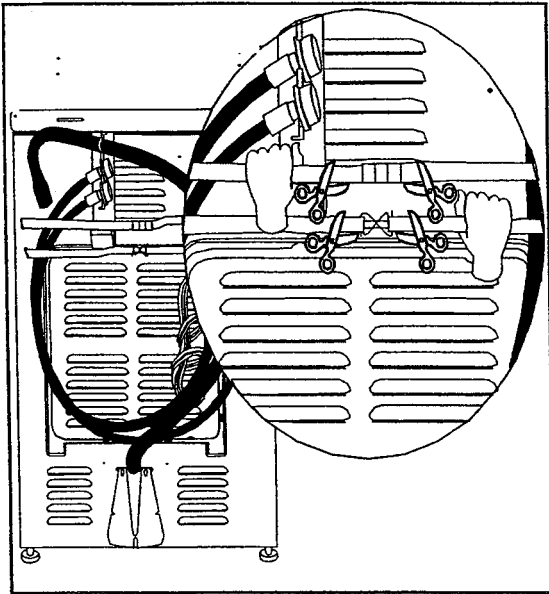


Figure 1-1

- b. Grasp each loose strap individually and pull the strap to remove it from the cabinet. Discard the strap (*Figure 1-2*).

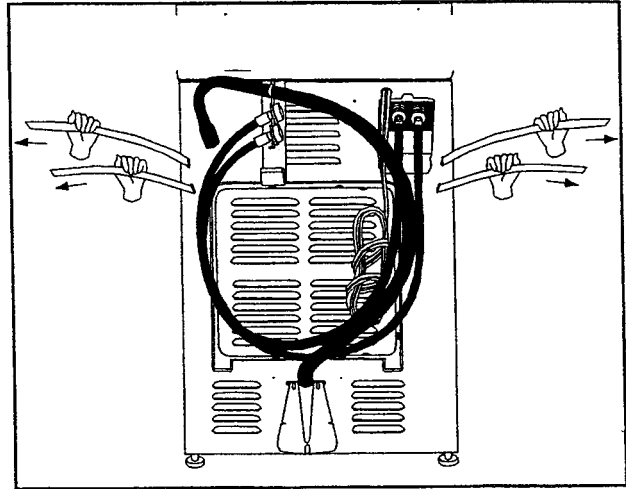


Figure 1-2

2. Tip washer slightly forward. Loosen rear leveling leg lock nuts. Tip washer back slightly to loosen front leveling leg lock nuts (*Figure 1-3*).

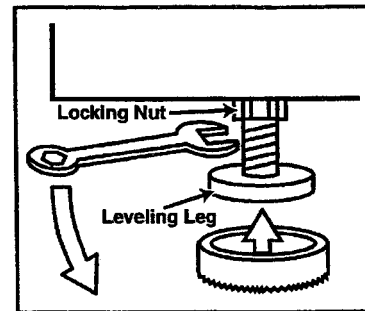


Figure 1-3

3. Locate the two (2) $\frac{1}{2}$ " hex-head shipping bolts extending up through the bottom of the base (*Figure 1-4*). The shipping bolts are near the center of the base toward the front of the washer. Remove both bolts, freeing the tub and suspension. Do not be alarmed should the tub assembly shift when the last bolt is removed. Some shifting of the tub is normal.

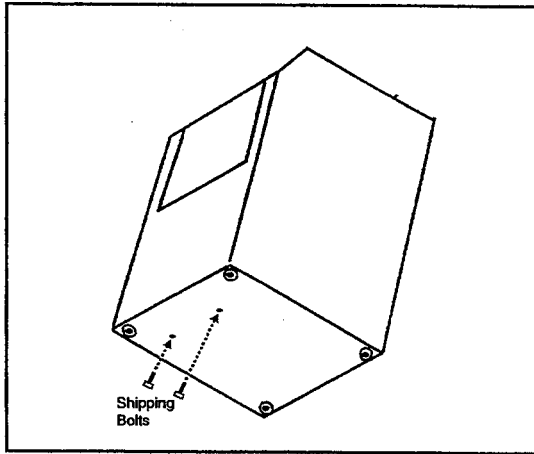
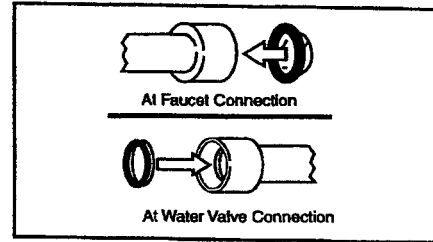


Figure 1-4

4. Slide the washer into position and check the levelness and stability of the washer. If necessary, slide the washer out of position to either raise or lower the leveling leg as required to level and stabilize the washer securely on all four legs. Slide the washer back into position to confirm levelness to the floor. When satisfied the washer is level, tighten the locking nuts up against the base of the washer. This will secure the leveling legs in place.
5. Install the rubber feet, found in the installation package, on all 4 legs (**Figure 1-3**).
6. Pull the drain hose vertically to the drain strap. Route the drain hose through the drain hose strap on the back of the washer and snap into the plastic hook of the strap.
7. Install gooseneck end of the drain hose into the drain standpipe. Be sure the connection is not airtight between the drain hose and the standpipe. Standpipe must be at least 24" high. 36" height is recommended.
8. Connect inlet hoses to water supply using screen washers at faucet connections, with the domed screen facing the faucet.



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Figure 1-5

With hoses attached to both the faucets and the water valve, turn on the water and check for leaks (**Figure 1-5**). **Note the H and C designations on the water valve bracket for the Hot and Cold hoses.**

NOTE: Accessory inlet hoses are available in various lengths, up to 10 feet.

NOTE: For further information, consult the installation instructions that come with the product.

DRYER PRE-INSTALLATION CONSIDERATIONS

Checkpoints for proper installation:

- Gas Dryers - Properly grounded electrical outlet is required. Use a 15 amp fuse or comparable circuit breaker for electrical service for gas dryers. **DO NOT USE AN EXTENSION CORD.**

1/2" gas supply line is recommended and must be reduced to connect to the 3/8" gas line of the dryer.

Check with your local codes for compliance with gas installation requirements.

- **Electric Dryers** - Properly grounded electrical outlet is required. Use a 30 amp fuse or comparable circuit breaker for electrical service for an electric dryer.

Location Considerations

The washer/dryer unit should be positioned to permit adequate room in front for loading and sufficient room behind for the exhaust system.

It is important that the room has adequate makeup air. The area where the unit is located must not obstruct the flow of combustion or ventilating air.

On gas washer/dryer units, adequate clearance must be maintained to ensure adequate air for combustion and proper operation of the dryer. This information is noted on the data plate.

THE DRYER MUST NOT BE INSTALLED OR STORED IN AN AREA WHERE IT WILL BE EXPOSED TO WATER AND/OR WEATHER. THE DRYER IS TO BE KEPT CLEAR AND FREE FROM COMBUSTIBLE MATERIALS, GASOLINE AND OTHER FLAMMABLE VAPORS AND LIQUIDS. A DRYER PRODUCES COMBUSTIBLE LINT. THE AREA AROUND THE DRYER SHOULD BE KEPT FREE OF LINT.



Warning - The dryer must be exhausted to the outside to reduce the risk of fire when installed in an alcove or closet.

Alcove or Closet Installation

An appliance installed in a closet should not have another fuel-burning appliance installed in the same closet. Each opening area in the door must have a minimum of 36 square inches. These openings must not be obstructed. (Louvered door with equivalent air opening is acceptable.)

DRYER INSTALLATION

Exhausting

Exhausting the dryer to the outside will prevent large amounts of lint and moisture from being blown into the room.

In the United States:

-all gas and electric dryers must be exhausted to the outside.

-electric dryers located in a confined area such as a bedroom, bathroom, or closet must be exhausted to the outside.

In Canada:

-all gas and electric dryers must be exhausted to the outside.



Warning - Plastic or nonmetal flexible duct presents a potential fire hazard.

NEVER USE PLASTIC OR NON METAL FLEXIBLE DUCT.

If your existing ductwork is plastic, nonmetal or combustible, replace it with metal. Use only metal exhaust duct that will not support combustion to ensure the containment of exhaust air, heat and lint.

Plastic flexible duct can kink, sag, be punctured, reduce airflow, extend drying times, and affect dryer operation.

If flexible metal duct must be used, use the type with a stiff sheet metal wall. Do not use flexible duct with a thin foil wall. Serious blockage can result if flexible metal duct is bent too sharply. Never install any type of flexible duct in walls, ceilings or other concealed spaces.

Once location of the exhaust outlet is determined, a 4 1/4" hole should be cut into the outside wall to accept the exhaust hood to the outside. The exhaust duct should end with an exhaust hood with a swing out damper to prevent backdrafts and entry of wildlife. Never use an exhaust hood with a magnetic damper. The hood should have at least 12 inches of clearance between the bottom of the hood and the ground or other obstruction. The hood opening should point down. Never install a screen over the exhaust outlet.

When possible, do not exhaust the dryer directly into a basement window well to avoid lint build-up. Do not exhaust under a house or porch.

If exhaust ductwork must run through an unheated area, the duct should be insulated and sloped slightly down towards the exhaust hood to reduce condensation and lint buildup.

Keep exhaust duct as straight and short as possible. Exhaust systems longer than recommended can extend drying times, affect machine operation, and may collect lint. Secure joints with duct tape. Do not use screws. Also, the smoother the inside surface of the duct, the less friction and the greater the air flow. Friction loss can be measured with a manometer, at the point where the exhaust duct connects to the dryer, **Figure 1-8**, and should never exceed .92" of water column.

A 4" round duct has an area of approximately 12.57 square inches. The area of the duct should never be reduced below this figure.

All exhaust duct joints should be taped to prevent lint and moisture laden air from being expelled into the building. Inspect and clean the interior of the exhaust system at least once a year. Disconnect electrical service prior to cleaning. Check the gas line on gas dryers anytime the dryer is moved. Frequently check to be sure the exhaust hood damper opens and closes freely.

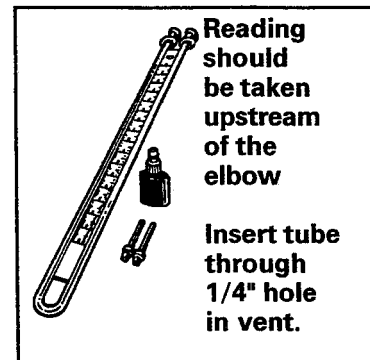
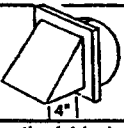



Figure 1-8

EXHAUST CHECK LIST:

- Exhaust system meets all local codes and exhaust requirements.
 - Plastic flexible duct is not used.
 - Completely inspected and clean of all lint accumulation from the interior of the duct run.
- NOTE:** Whenever hooking up a new dryer to an existing duct system, always inspect the ductwork for any lint accumulations or restrictions. Failure to do so will hinder the performance of the new dryer.
- Duct is not kinked or crushed.
 - The exhaust hood damper opens and closes freely.

EXHAUST HOOD TYPE		
Number of 90° Turns		
Maximum length of 4-inch diameter rigid metal duct.		
0	65 ft.	59 ft.
1	54 ft.	48 ft.
2	44 ft.	38 ft.
3	36 ft.	30 ft.
4	28 ft.	22 ft.
Maximum length of 4-inch diameter flexible stiff walled metal duct.		
0	36 ft.	28 ft.
1	32 ft.	24 ft.
2	28 ft.	20 ft.
3	25 ft.	17 ft.
4	23 ft.	15 ft.

WARNING: IF THE DRYER IS NOT EXHAUSTED TO THE OUTSIDE, SOME FINE LINT WILL BE EXPELLED INTO THE LAUNDRY AREA. AN ACCUMULATION OF DUST OR LINT IN ANY AREA OF THE LOCATION CREATES A FIRE HAZARD. ANY LINT ACCUMULATIONS MUST BE CLEANED FREQUENTLY.

Gas Requirements

THE INSTALLATION MUST CONFORM WITH LOCAL CODES, OR IN THE ABSENCE OF LOCAL CODES, WITH THE NATIONAL FUEL GAS CODE ANSI/Z223.1 LATEST REVISION (FOR THE UNITED STATES), OR WITH THE CAN/CGA-B149.

Installation Codes

A 1/2" gas supply line is recommended and must be reduced to connect to the 3/8" gas line on the dryer. The National Fuel Gas Code requires an approved manual shut off valve be installed within six feet of the dryer. Also a 1/8" N.P.T. (National Pipe Thread) plugged tapping should be installed immediately upstream of the gas supply connection to the dryer for test gauge connections.

The dryer must be disconnected from the gas supply piping system during any pressure testing of the gas supply lines.

DO NOT reuse old flexible metal gas line.

Flexible gas line must be design certified by American Gas Association (CGA in Canada).

NOTE: Any pipe joint compound used must be resistant to the action of any liquefied petroleum gas.

The dryer uses an automatic ignition system to ignite the burner. There is no constant burning pilot.

Gas dryers are equipped with a burner orifice for operation on NATURAL gas. If the dryer is to be operated on LP (liquid propane) gas, it must be converted for safe and proper performance by a qualified service technician. Conversion kits from NATURAL to LP, or LP to NATURAL are available through your Maytag distributor. If other conversions are required, check with the local gas utility for specific information concerning conversion requirements.

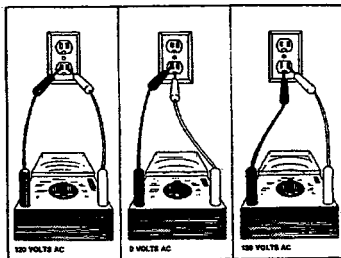
Electrical Requirements

Gas Dryer: The dryer is supplied with a power cord, which must be plugged into a grounded 120 volt approved electrical service protected by a dedicated 15 amp fuse or circuit breaker.

Electric Dryer: U.S. electric model dryers are not supplied with a power cord. Check the data plate of the dryer to determine correct voltage requirements for the dryer.

GROUNDING POLARITY CHECKS

IMPORTANT: *The dryer frame is grounded to the neutral conductor at the terminal block. If local codes do not permit grounding through the neutral, refer to Four Wire System Connections.*



WARNING:
For your safety and to protect the test equipment, be sure that the wall outlet is properly polarized and grounded.

NOTE: *A U.L. listed strain relief must be used with all electrical cable or power cords inserted through the hole provided in the cabinet near the terminal block.*

Three-Wire System Connections

The neutral (white or center wire on the power cord) conductor must always be connected to the center (silver colored) post of the terminal block.

The other two leads of the electrical cable or power cord should be connected to the remaining two posts on the terminal block. Check all terminal nuts for proper tightness.

Four-Wire System Connections

The ground strap should be removed from the terminal block bracket and folded back over the center (silver colored) post of the terminal block. The neutral (white or center wire on the power cord) is connected to the center (silver colored) post of the terminal block. The green ground wire is attached to the terminal block mounting bracket by the ground strap screw removed earlier.

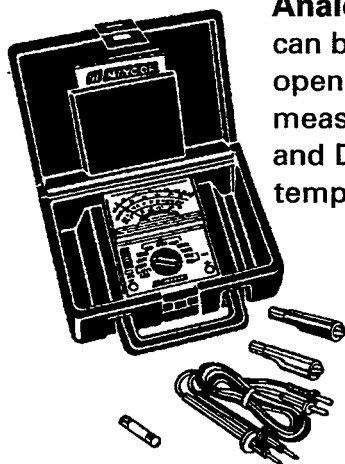
The other two leads of the electrical cable or power cord should be connected to the remaining two posts on the terminal block. Check all terminal nuts for proper tightness.

WARNING: *If the dryer is being converted from a four-wire system connection to a three-wire system connection, the ground strap folded over the center terminal post must be reconnected to the terminal mounting bracket ground screw. This will ensure the dryer frame is grounded to the conductor of the terminal block.*

TEST EQUIPMENT

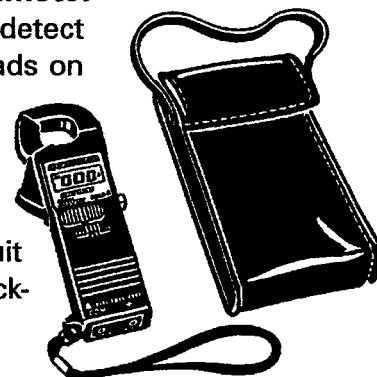
The equipment required to service Maytag products depends largely upon the conditions you encounter. Locating a malfunction will often require the use of electrical testing equipment along with other test equipment such as:

DESCRIPTION	PART NUMBER
Analog Test Meter	20000005
Digital Test Meter	20001001
Clamp-on Ammeter	20000002
AC Voltage Sensor	20000081
Air Test Meter	20000029
Water Column Manometer	038205



Analog Test Meter can be used to check for open or closed circuits, measure resistance, AC and DC volts, and temperature.

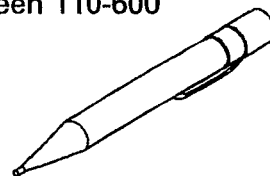
Clamp-On Ammeter can be used to detect shorts. Overloads on the circuit breaker or fuse can be traced to either the washer or circuit breaker by checking the washer current draw.

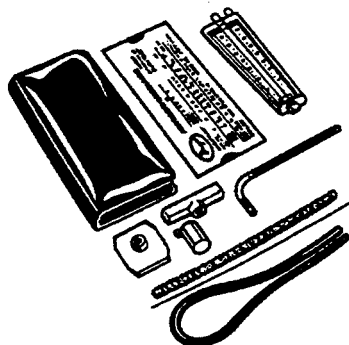


Digital Test Meter can be used to check for open or closed circuits, measure resistance, AC and DC volts, and temperature.



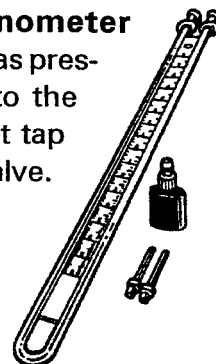
AC Voltage Sensor can be used to alert you if AC voltage is present so proper safety precautions can be observed. The tip of the sensor will glow bright red if voltage is between 110-600 volts AC.





Air Test Meter can be used to check back pressure in the exhaust duct. Vent restriction can cause back pressure and disrupt normal operations of the dryer.

Water Column Manometer can be used to check gas pressure being supplied to the dryer and at the outlet tap pressure on the gas valve.



MANOMETERS

An insufficient gas flow can cause problems. Therefore, checking the gas pressure at the time service calls are performed may prevent a call back.

Gas pressure can be checked with an instrument called a "manometer." This device can tell you if there is a "low" LP tank, restricted gas flow, bad gas valve, a malfunctioning pressure regulator, too many gas appliances operating off of a small supply line, or an improperly converted appliance from Natural to LP gas.

Other types of manometers exist; however, the type of manometer we will discuss in this manual is a "U" shaped tube in which weight is added. Both ends are open so the water can equalize and seek its own level, which will be the same in both arms of the "U" shaped tube.

A flexible rubber hose is connected to the lower open end of the manometer and to the gas source. Gas pressure is exerted on one of the water columns, pushing it down. The water level then rises in the other column. A measurement of the differential in water levels is then taken as the measure of gas pressure.

The water column (W.C.) for a Maytag dryer is 3.5" W.C. for Natural gas and 11" W.C. for LP gas.

How to Use

1. Unplug dryer.
2. Remove front panel.
3. Shut off the gas to the dryer.
4. Install a 5/16" tapered fitting at the gas valve pressure tap. Use thread seal tape or compound on fitting (*Figure 2-1*).

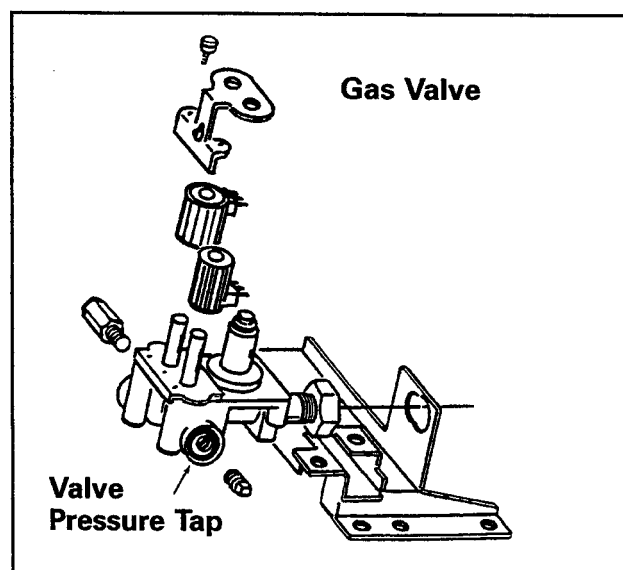


Figure 2-1

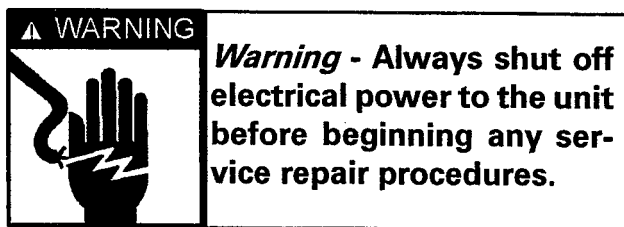
5. Fill the manometer tube with water until each side equalizes at "0" water column.
6. Push the end of the manometer hose onto the 5/16" fitting, located on the gas valve.

7. Connect hose to one end of the manometer.
8. Turn on the gas and reconnect dryer to power. Run the dryer in a heat cycle. Read the manometer with the burner ON, (check for gas leaks).
9. The amount of water column present is equal to the total amount of deflection shown in the manometer, when the gas is turned on.

NOTE: *Once the test is completed, make sure the tapered fitting is removed from the gas valve and the plug is repositioned into the gas valve and resealed with pipe seal. Check for gas leaks again. This should be done with a soap or bubble solution. NEVER USE OPEN FLAME TO CHECK FOR GAS LEAKS.*

HIGH WATER COLUMN PRESSURE can be caused by the wrong orifice, improper air mixture or high gas pressure. If pressure is as high as suspected, contact the local gas utilities company to check the outside regulator.

ELECTRICAL TESTS - WASHER



Grounded Components

When performing service diagnostics, replacements and repairs, always check to determine whether all ground wires linking panel and components are reattached if removed.

Voltage Checks

Generally, these checks will consist of taking readings at the wall receptacle to determine the availability of voltage to the product. Voltage checks on individual components of a product are not recommended due to the possibility of electrical shock. Component part testing is best accomplished through continuity checks with an Appliance Test Meter (*See Electrical Test Equipment*).

NOTE: *Use of the meter on voltage higher than the indicated range may cause permanent damage to the meter. To prevent damage, first select the highest range and then lower the range for readings which fall within the lower scale.*

Set up meter for use as follows:

1. Turn selector knob to desired meter function and appropriate range.
2. Plug black lead into socket marked black (-).
3. Plug red lead into socket marked red (+).
4. Place test leads into receptacle to determine voltage available.

Wax Motor Check - Door Lock Mechanism

Check the wax motor for proper ohms resistance. This check should be made with the electrical supply disconnected from the washer. Remove the wire harness from the wax motor terminals and place the ohm meter probes on the terminals of the wax motor. The wax motor should have a resistance of approximately 950-1100 ohms at room temperature.

Water Valve Test

Check the water valve for electrical continuity. **This check should be made with the electrical supply disconnected from the washer.** Remove the wire harness from the water valve terminals and place the ohm meter probes on the terminals of the water valve. The water valve solenoid coil should have a resistance between 500 - 1000 ohms. If no ohms are shown on the display of the electrical test meter, the solenoid coil has an open winding and the valve should be replaced.

Electrical Test Chart

FUNCTION	WIRE CONNECTIONS	OHMS CHECK
Water Valve - HOT	OR52 WH57	500-1000
Water Valve - COLD	BU9 WH57	500-1000
Water Valve - BLEACH	PK5 WH57	500-1000
Water Valve - SOFTENER	PU2 WH11	500-1000
Pump	BK35 WH13 or 39	18
Wax Motor - Door Lock	BR14 WH13 or 57	950-1100
Pressure Switch - Wash Level	PU15 or 11 BR12	Empty - Closed Full - Open
Pressure Switch - Rinse Level	GY21 YL22	Empty - Closed Full - Open

ELECTRICAL TESTS - DRYER



Warning - Always shut off electrical power to the unit before beginning any service repair procedures.

Voltage Checks

Generally, these checks will consist of taking readings at the wall receptacle in order to determine the availability of voltage to the product. Voltage checks on individual components of a product are NOT recommended due to the possibility of electrical shock. Component part testing is accomplished through continuity checks with an appliance test meter.

NOTE: *Use of the meter on voltage higher than the indicated range may cause permanent damage to the meter. To prevent damage, first select the highest range and then lower the range for readings which fall within the lower scale.*

Set up meter for use as follows:

1. Turn selector knob to desired meter function and appropriate range.
2. Plug black lead into socket marked (-) negative.
3. Plug red lead into socket marked (+) positive.
4. Place test leads into receptacle in order to determine voltage available.

Voltage Check with Voltmeter

Voltage readings may be taken by using the leads supplied with the meter. The meter is preset to read on the 0-300 VAC scale but can be dropped down to 0-150 VAC range by depressing the red button on the side of the meter.

Using Voltmeter as a Continuity Tester

Continuity testing is usually an ohmmeter function, but a voltmeter can also be used, particularly when testing switch contacts. The primary difference is that power is applied to the circuit under test and appropriate caution **MUST** be exercised.

The voltmeter is connected across the component terminals with the wires still in place and with power disconnected. The meter is set for the 300 volt range and power is reconnected. A voltage reading indicates a voltage drop across the component. There should be no voltage drop across closed switch contacts or fuses.

The voltmeter connected across thermostat terminal, as an example, will show no reading when the thermostat is calling for heat and will show line voltage when the thermostat cycles, if the timer is in heat cycle.

This type of continuity testing is an excellent method of locating questionable switch contacts. Any voltage drop across closed switch contacts indicates poor electrical contact. The resulting internal heating can shorten component life.

SECTION 2. SERVICE PROCEDURES

CAUTION

•Extreme caution should be taken when performing voltage checks due to the danger of electrical shock.

•Except as necessary to perform a particular step in servicing a product, the electrical power supply should ALWAYS be disconnected.

WASHER COMPONENTS

ACCESS PANEL

Removal

1. Disconnect power to the machine.
2. Remove three screws securing the access panel to the washer/dryer (*Figure 2-1*).

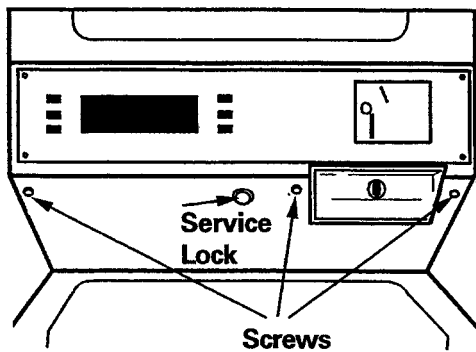


Figure 2-1 SL095TIF

3. Unlock the service lock and roll the top of the access panel toward you and lift away (*Figure 2-2*).

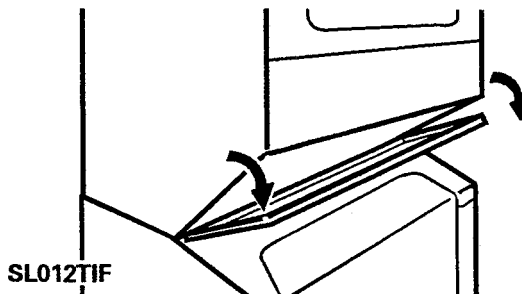


Figure 2-2

SERVICE SWITCH

1. Disconnect power to the machine.
2. Remove the Access Panel.
3. Remove the two screws securing the switch (*Figure 2-3*).

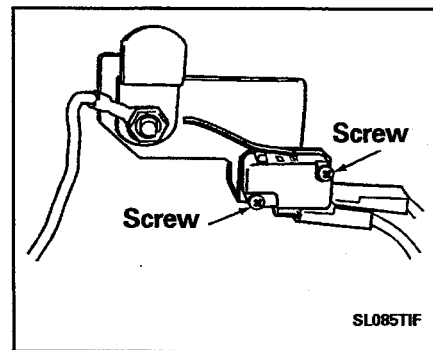


Figure 2-3

ACCESS COVER

1. Disconnect power to the machine.
2. Remove the Access Panel.
3. Locate and remove the 5/16" hex head screw located in the front of the dryer base frame (*Figure 2-4*). This screw secures the access cover to the base frame.

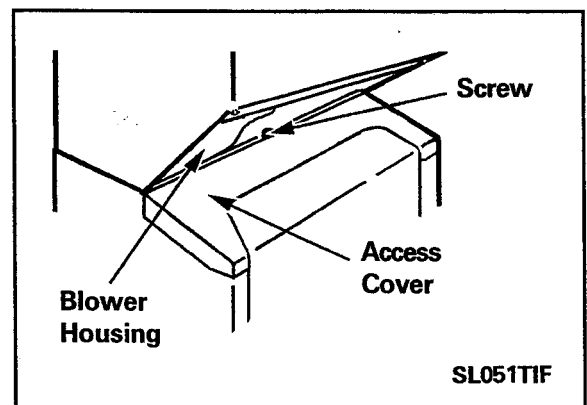


Figure 2-4

4. Open the door.
5. Carefully slide the access cover down and away from the machine to disengage the cover from retaining clips on the front shroud located above the front panel goalposts (*Figure 2-5*).

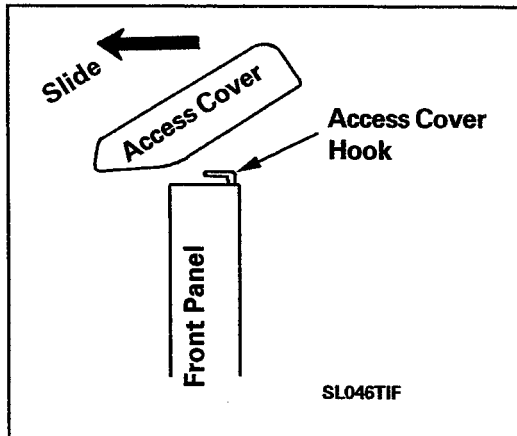


Figure 2-5

CONSOLE

1. Disconnect power to the machine.
2. Remove the Access Panel.
3. Remove three security and two pozi drive screws securing the control panel under the console (*Figure 2-6*).

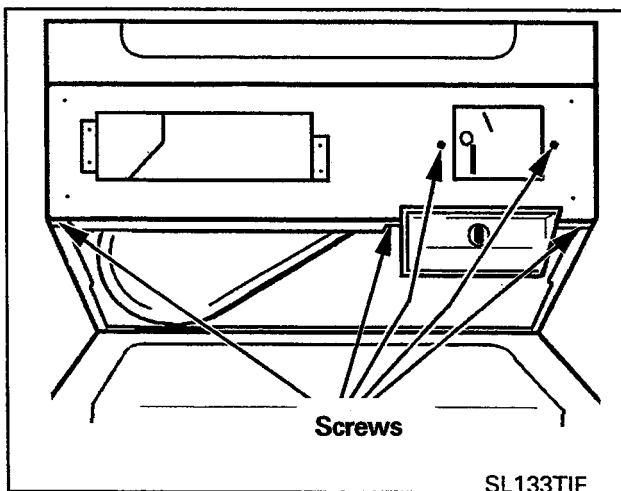


Figure 2-6

4. Lift control panel away from the dryer (*Figure 2-7*).

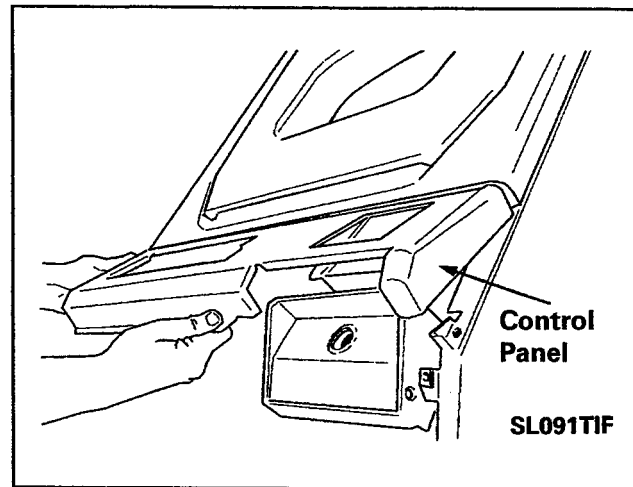


Figure 2-7

MICROPROCESSOR

The microprocessor controls the operation of the machine. Inputs from other components work in conjunction with a membrane "touchpad" selector to select and start cycles (*Figure 2-8*).

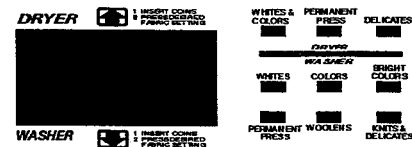


Figure 2-8

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1. Disconnect power to the machine.
2. Remove the four security screws that mount the facia.
3. Remove the three screws securing the microprocessor to the console panel (*Figure 2-9*).

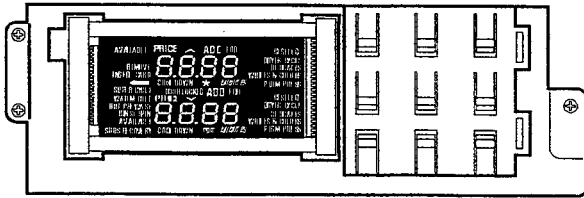


Figure 2-9

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4. Observe the position of the harness connector plugged into the microprocessor board (Figure 2-10).

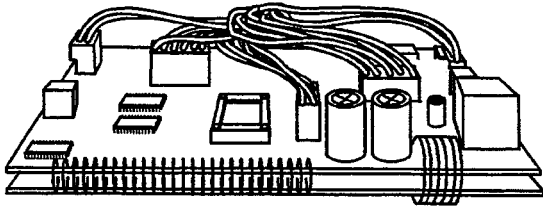


Figure 2-10

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COIN DROP ACCEPTOR

The coin drop acceptor is used only in the PD model washers. This is a mechanical coin drop assembly with a coin sensor attached. In normal use, occasional cleaning in hot water will be all that is needed to maintain reliable operation of the coin drop acceptor. The coin drop does not need to be oiled for this will only cause dust or dirt build up which could disrupt the operation of the acceptor.

The coin drop assembly checks coins for diameter, thickness and magnetic properties (Figure 2-11).

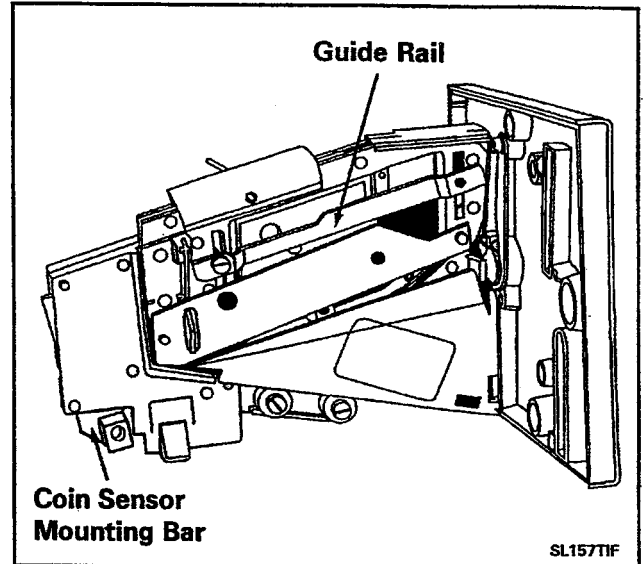


Figure 2-11

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There is a coin return button that can be pressed if the coin jams in the coin acceptor. When it is pressed, the button presses against a tab which is pushed to one side spreading the coin acceptor plates apart. This allows the coin to fall and roll into the coin return bail area. The face plate has a coin bail (*arched area for coin*) which is located at the base of coin return slot. The face plate can be removed from the coin acceptor by removing the two screws from the back side of the face plate.

The coin sensor is mounted to a bar located at the back of the coin acceptor. There is a time period for a coin to pass the coin sensor. If the coin fails to pass through the coin sensor at a certain speed then the microprocessor may assume someone is tampering with the machine or it is a non-valid coin. The sensor will then go into a standby mode and not accept any more coins. The coin sensor is set in position at the time of manufacturing for the proper reading of coins. A guide rail on the left side of the coin drop assembly is adjustable (*both at the front and rear*) to accept proper diameter coins, yet reject oversized coins. Adjust the front pin in the guide rail to miss the quarter and tighten the front guide rail screw. Set the back guide rail pin to allow the quarter by, and tighten the back guide rail screw.

REMOVAL

1. Disconnect power to the machine.
2. Remove access panel and console to gain access to the coin drop (*See Access Panel & Console Removal*).
3. Remove two 3/8" screws holding coin drop mounting plate (*Figure 2-12*).

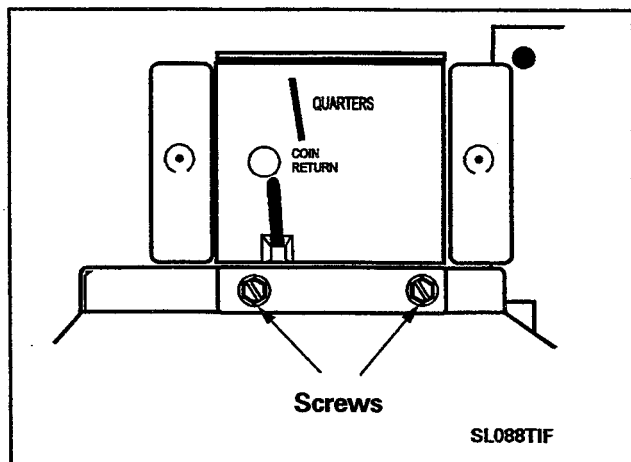


Figure 2-12

4. Remove two screws securing coin drop to mounting plate (*Figure 2-13*).

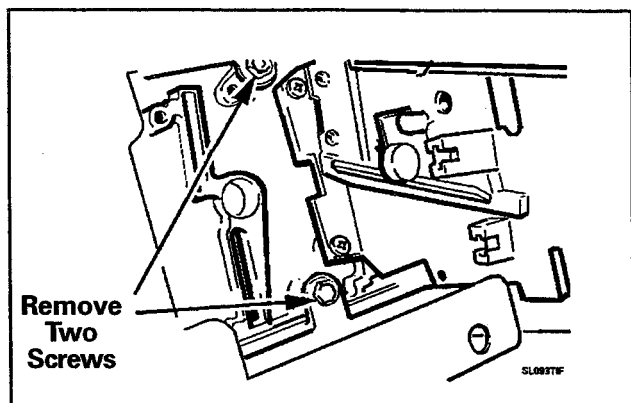


Figure 2-13

DOOR ASSEMBLY & HINGES

The door assembly is reversible. It contains an inertial vibration damper comprised of a steel plate suspended with springs. The damper is designed to tune out excessive vibrations generated by the machine during the spin cycle. Replacement inner door liners will be shipped with the vibration damper in place.

Removal

1. Open the door and remove the center screw of each hinge secured to the inner flange of the front panel in the door opening.
2. Grasp the door with both hands and lift the hinge area slightly. Draw the door assembly away from the machine. This will disengage the hinges from the slots in the front shroud (*Figure 2-14*). If the hinges bind, press in on the plastic shroud near the hinge toward the cabinet.

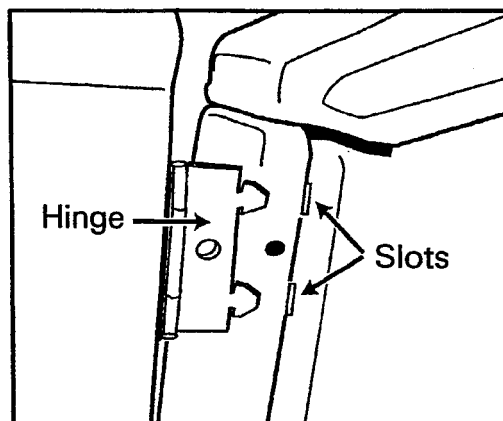


Figure 2-14

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Reversal

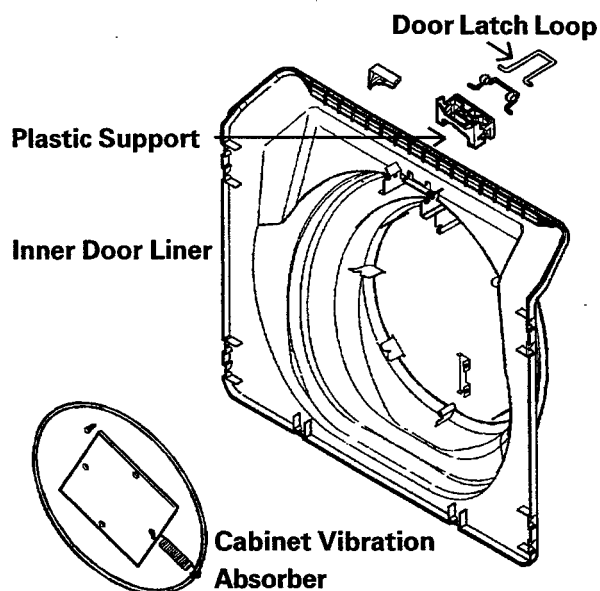
1. Repeat the above steps plus, remove the corresponding sheet metal spacers on the opposite side of the door opening.
2. Remove the hinges from the door and re-locate them to the other side of the door.
3. Remount the door into the new slots and secure with one screw into each hinge.
4. Mount the sheet metal spacers onto the side the hinges previously were to cover the hinge slots in the front shroud.

Disassembly

1. Remove ten screws located across the bottom and along the sides of the door panel. The top edge of the outer panel is folded over the inner door plug.
2. With the outer door panel removed, the stabilizer is exposed and is attached to the inner door plug.

Cabinet Vibration Absorber

The purpose of the cabinet vibration absorber is to provide a dampening effect to the washer during the spin cycle. By dampening the machine vibration, the washer is able to maintain and achieve optimum spin performance. The stabilizer is attached to the inner door plug with two screws (*Figure 2-15*).



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Figure 2-15

Door Latch Loop

The door latch loop is secured to the inner door plug by a plastic spacer snapped into the door liner. A spring retains the loop in the proper position to align with the door lock mechanism when the door is closed.

FRONT PANEL

Removal

1. Disconnect power to the machine.

2. Open the door and remove the four screws along the inside lip of the door opening. The two that are located vertically, on either side of the door opening, secure the front panel to the front shroud assembly (*Figure 2-16*). Care should be taken when opening and closing the door with the screws removed.

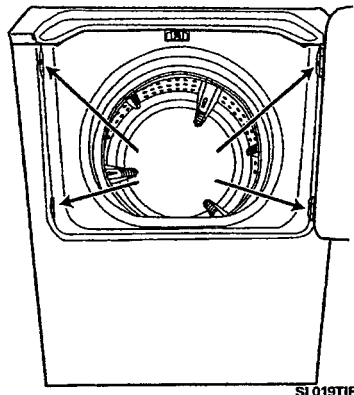


Figure 2-16

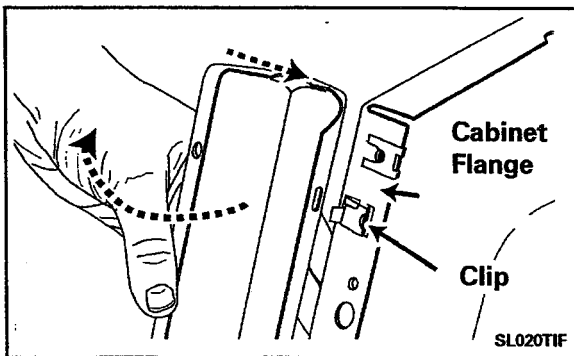


Figure 2-17

3. Remove the door.
4. To remove the front panel, open the door, twist the upper right and left panel extensions inward by pressing in on the outer upper edges of the front panel posts. This will disengage the front panel posts from clips located on the face of the cabinet flange (*Figure 2-17*).
5. Tilt the top of the front panel away from the washer. Remove the front panel.

FRONT SHROUD ASSEMBLY

The shroud assembly ties the sides of the cabinet together across the front for stability and provides support for mounting of the door assembly, front panel and door lock mechanism. To gain access to components behind the front shroud, the assembly can be removed as a whole assembly and lifted onto the top of the washer. This will allow access to the tub cover, spin basket, sump area, etc...

Removal

1. Disconnect power to the machine.
2. Remove the access panel, access cover, front panel and door to expose the front shroud assembly.
3. Disconnect the electrical connectors by squeezing the retaining clips on the connectors and gently work the connectors out of the sockets (*Figure 2-18*).

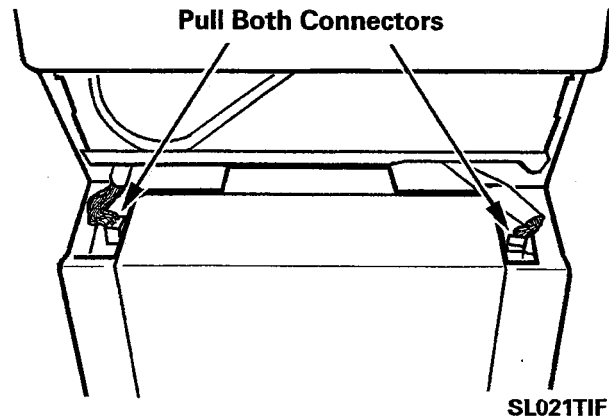


Figure 2-18

6. Unsnap the boot gasket from around the inside perimeter of the door opening by pulling outward on the sealing lip of the gasket (*Figure 2-19*).

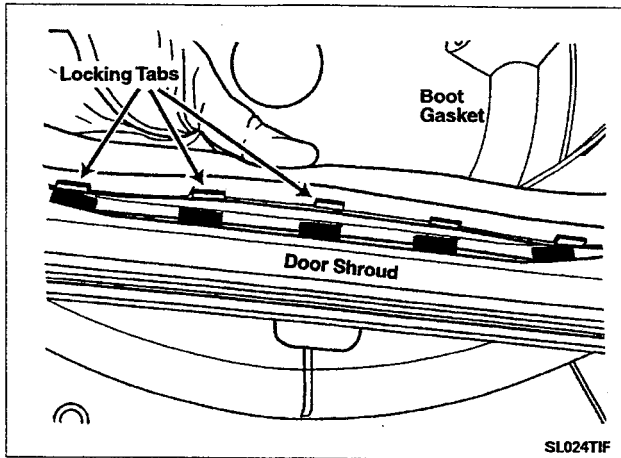


Figure 2-19

7. Reach up between the plastic shroud and the outer tub cover and locate the fabric softener inlet hose positioned into two clips on the front shroud support. Unhook the hose from the clips. Locate the suds well and unhook the hoses from the retaining clips on the well (Figure 2-20).

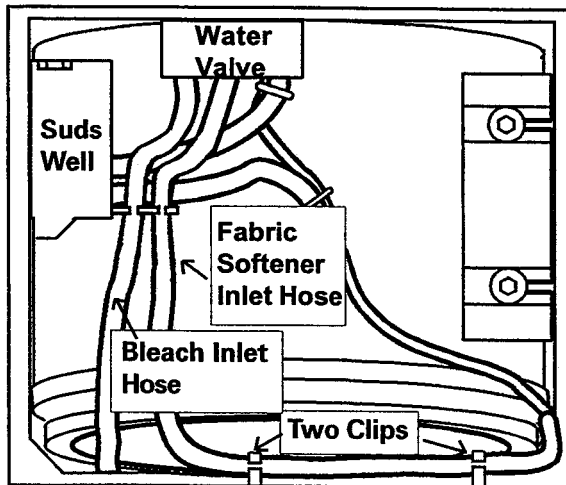


Figure 2-20

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8. Carefully press in on the sides of the plastic shroud to allow the hose clamps on the dispenser outlet hoses to clear the metal bridge support surrounding the shroud (Figure 2-22).
9. Tilt the plastic shroud forward and remove the fabric softener and bleach dispenser inlet hoses by sliding the spouts up (Figure 2-21).

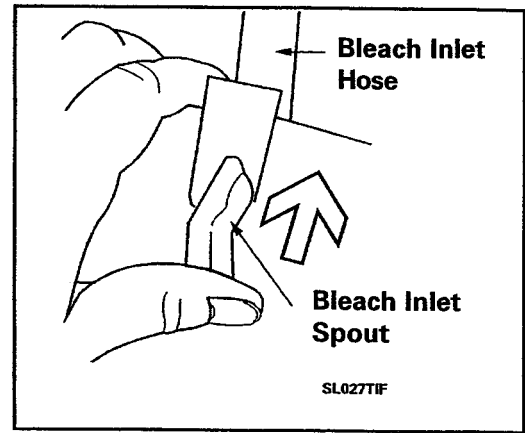


Figure 2-21

9. Tilt the top of the plastic shroud forward at a 40 degree angle and slide the shroud to the right approximately one inch. **Note:** You may have to lightly press in on the the upper sides of the plastic shroud to enable the lower dispenser outlet hose clamps enough clearance to pass the metal side supports (Figure 2-22). Lift the shroud from the shroud support bridge.

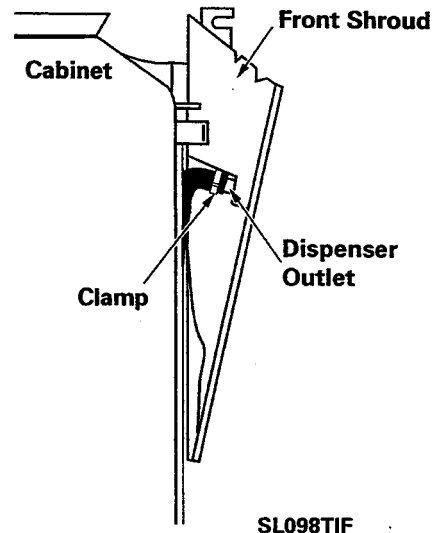


Figure 2-22

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SHROUD SUPPORT ASSEMBLY

Removal

1. Disconnect power to the machine.
2. Remove the access panel, access cover, front panel and door to expose the front shroud assembly.

3. Disconnect the electrical connectors by squeezing the retaining clips and gently working the connectors out of the sockets.
4. Remove the six screws across the lock support (*Figure 2-23*).

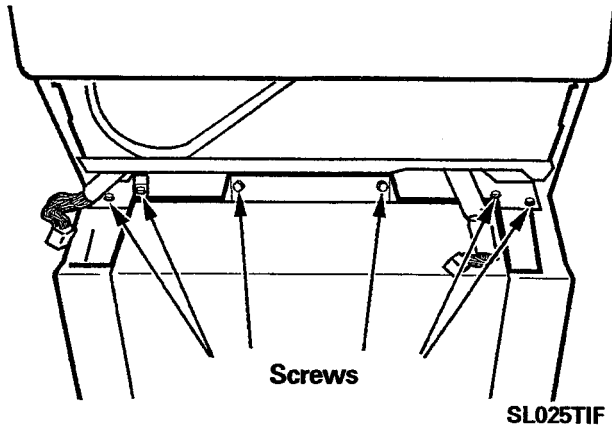


Figure 2-23

5. Remove the door.
6. Unsnap the boot gasket from around the inside perimeter of the door opening by pulling outward on the sealing lip of the gasket (*Figure 2-19*).
6. Remove eight hex-head screws around the front shroud assembly (*Figure 2-24*).

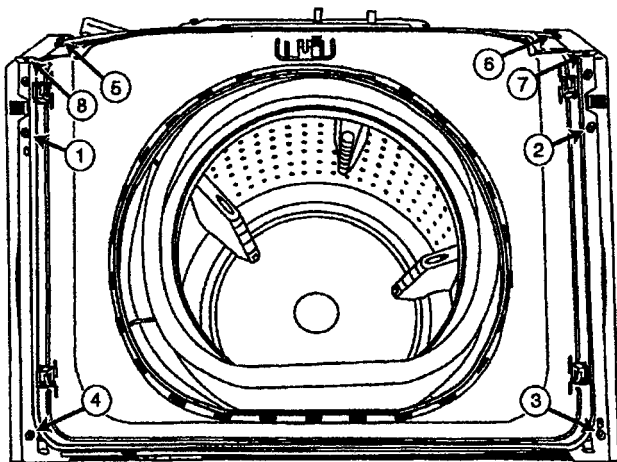


Figure 2-24

7. Removal and replacement of the screws in the following order, as illustrated, will aid in the removal and reinstallation of the assembly to the cabinet. Failure to do so will hinder removal and replacement of the shroud onto the cabinet (*Figure 2-24*).
8. Loosen the dispenser outlet hose clamps at the tub cover and remove the front shroud dispenser assembly.

DOOR LOCK MECHANISM

The purpose of the door lock mechanism is to secure the door during the spin cycle. When the door is shut, the wire loop on the door engages the rotating gear in the door lock mechanism (*Figure 2-25*). When the proper water level is reached and the pressure switch is satisfied, 120 VAC is applied to the wax motor. The piston in the wax motor will extend, pushing the latch axle and sliding gear from left to right. Teeth on the face of the sliding gear will intermesh with the teeth on the side of the rotating gear (normally takes about 45-60 seconds). This interlocking of teeth provides the locking action of the lock mechanism.

At the end of the spin cycle, when tumbler speed drops below 90 RPM, voltage is no longer applied to the wax motor. The wax motor will cool and relax the piston on the wax motor. The latch axle and sliding gear are then pulled from right to left, disengaging the teeth of the sliding gear from the rotating gear (normally takes 1 - 1½ minutes). This allows the rotating gear to be in a position to rotate if necessary, should the door be opened.

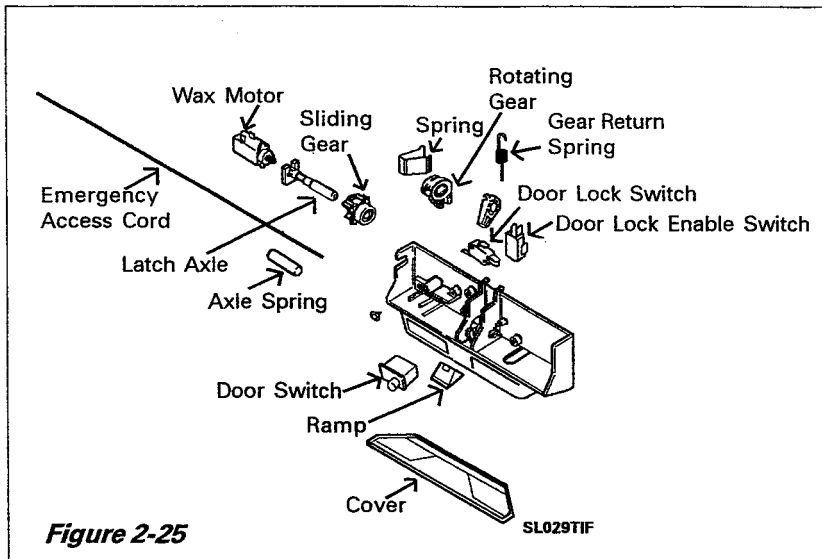


Figure 2-25

Two switches in the door lock mechanism inform the machine microprocessor control when the door is latched shut and when the door is securely locked. For more information, refer to section on **Electrical-Mechanical Troubleshooting**.

An Emergency Access Cord (filament) is attached to the sliding gear, should the wax motor fail in the extended position and entry into the washer is necessary. To gain access to the cable, remove the dispenser bezel.

Once this is removed, the cable is exposed. By carefully applying both a steady pull to the access cord and opening force to the door, the wax motor is overridden and the sliding gear is pulled from right to left, away from engagement with the rotating gear. This allows the rotating gear to release the wire loop of the door.

NOTE: *When the cord is released, the lock will go back into a locked position.*

Removal

1. Disconnect power to the machine.
2. Remove the access panel, access cover, door and front panel to expose the door lock mechanism (*See Front Panel Removal*).
3. Remove light cover.
4. Remove the wires from the lock switches, wax motor and light fixture.
5. Remove two 5/16" hex-head screws securing the switch support to the metal shroud support (*Figure 2-26*).
6. Lean plastic shroud forward. Roll the top of the lock mechanism forward and out of the shroud.

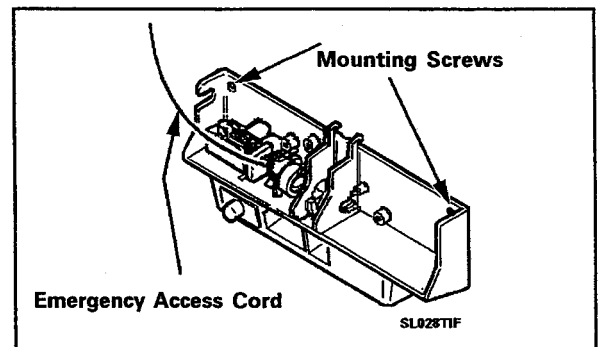


Figure 2-26

CABINET ASSEMBLY w/REAR ACCESS PANEL

Removal of the access panel, allows access to the rear components of the washer (Figure 2-27).

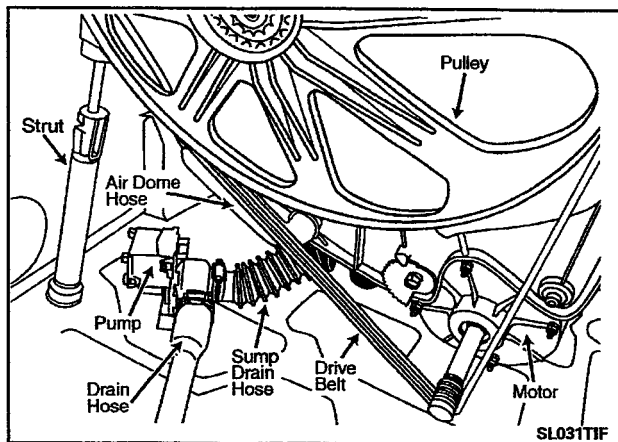


Figure 2-27

Removal

1. Remove the four hex-head screws surrounding the access panel (Figure 2-28).

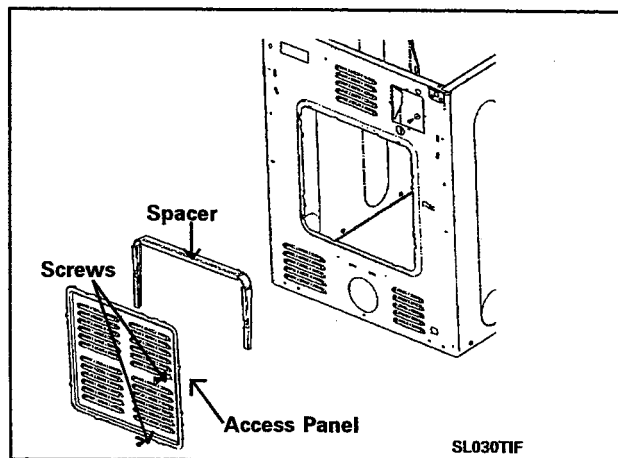


Figure 2-28

WATER VALVE

The water valve is accessible from the front of the machine or by removing the dryer.

Removal From Front

1. Discontinue power and water to the washer.
2. Remove the access panel, access cover, front panel, door and drop the plastic front shroud to expose the top of the outer tub assembly (See Front Shroud Assembly).
3. Allow the front shroud to suspend down in front of the washer to expose the front suspension springs (Figure 2-29).
4. Remove the four screws across the lock support. Place the lock support aside.

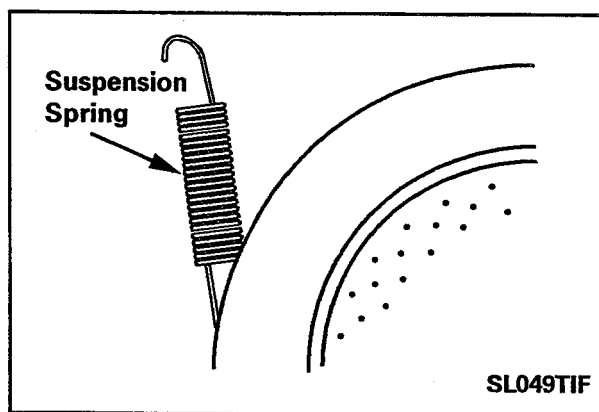


Figure 2-29

5. Remove the mounting screw holding the "suds well" into position. Slide the "suds well" forward and lower out of the way (Figure 2-30).

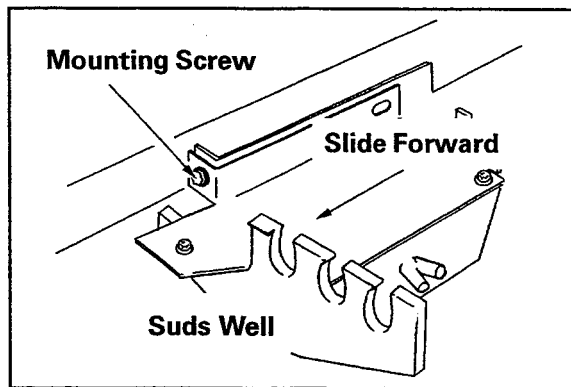


Figure 2-30

6. Remove the wire harness connections to the water valve solenoids.
7. Locate and loosen the valve mounting screw by turning the screw at least three full turns. **Note: The mounting screw serves as a locating pin to hold the valve in position on the mounting bracket. By partially removing the screw, the water valve can now be slid to the left and removed from the bracket (Figure 2-31).**
8. Carefully lift the valve with the inlet hoses attached and direct the inlet hoses through the openings in the valve mounting bracket.

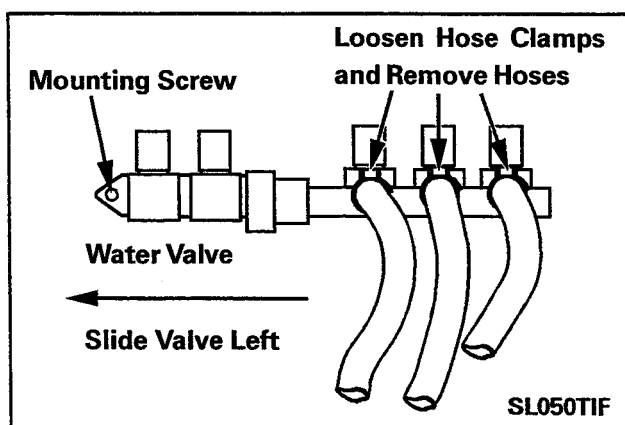


Figure 2-31

9. Remove the inlet hoses from the water valve connections. **If possible, clamp the hoses shut and/or have a towel handy in case of overspray when water pressure is relieved.**
10. Place a towel under the water valve and loosen the hose clamps to the valve. Carefully remove each hose from the valve. Note the hose orientation for later reinstallation.
11. Reinstall by reversing the previous steps. Check for proper hose orientation and kinked hoses.

WATER LEVEL PRESSURE SWITCH

The water pressure switch is located along the rear upper cabinet flange of the washer and mounted to a galvanized bracket secured to the flange. The air dome hose is inserted into the lower end of the mounting bracket (*Figure 2-32*). The nipple of the pressure switch is inserted into the end of the air dome hose which is secured by the lower mounting bracket.

Removal

1. **Discontinue power and water to the washer.**
2. Remove the Access Panel, Access Cover, Front Panel, Door and drop the plastic Front Shroud to expose the top of the outer tub assembly (*See Front Shroud Assembly*).
3. Follow steps 1 through 5 outlined under Water Valve removal to further gain access to the water level pressure switch.
4. Slide the pressure switch up, away from the air dome hose (*Figure 2-32*).

- Remove wire harness from the pressure switch.
- Rotate the pressure switch 90 degrees to disengage locking tabs on the back of the switch from the mounting bracket (*Figure 2-32*).
- The mounting bracket for the pressure switch is secured to the rear console panel with one screw.
- To replace, insert air dome hose into the bracket. Insert the pressure switch nipple into the air dome hose. Push the pressure switch into the bracket until it "snaps" into place.
- Slide the pressure switch up on the mounting bracket, away from the air dome hose. The mounting bracket for the pressure switch is secured to the rear cabinet flange of the washer cabinet (*Figure 2-32*).
- Pull the air dome hose down through the "P" clip mounted to the rear wall of the washer cabinet.

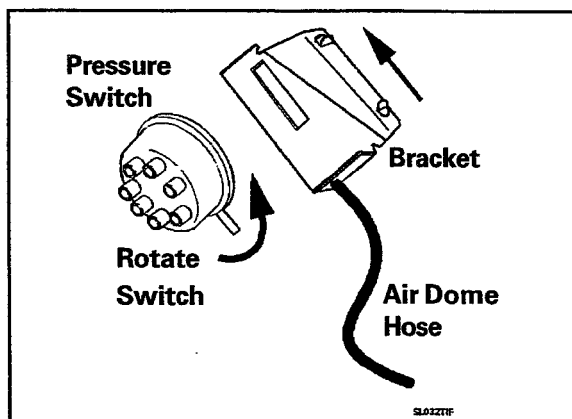


Figure 2-32

AIR DOME HOSE

The air dome hose connects the pressure switch to the air dome located in the sump area of the outer tub. Routing of the air dome hose passes down the rear wall of the cabinet to the rear sump area of the outer tub. Two holding clips retain the air dome hose to the cabinet away from the belt and pulley.

Removal From Console

- Disconnect power to the machine.
- Remove the console (*See Console Removal*).

Removal From Outer Tub

- Disconnect power to the machine.
- From behind the outer tub, slide off the retainer clip securing the air dome hose to the rear spout of the outer tub.
- Remove one of the rear baffles.
- Grasp and lift the airdome hose from the sump area (*Figure 2-33*).
- Pull the air dome and hose out through the sump opening in the spin basket.

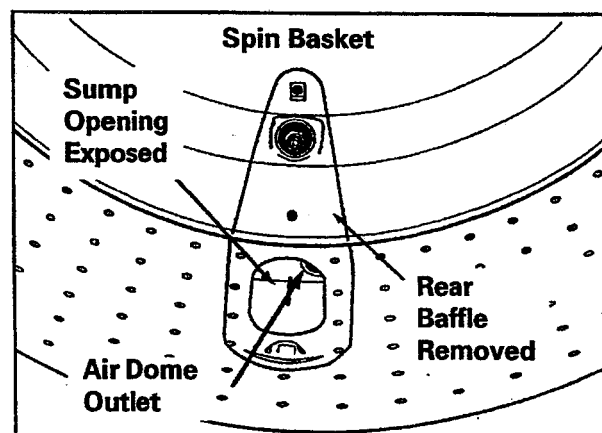


Figure 2-33

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Replacement/Routing

- Thread the narrow end of the hose through the air dome outlet in the rear of the outer tub (*Figure 2-33*). Apply alcohol to lubricate the hose to ease insertion into the outer tub air dome outlet.

NOTE: *Using soap and water may lead to a potential leak.*

2. Secure the retainer clip on the outside ridge of the air dome hose.
3. Push the bent end of the air dome down into the sump area, below the spin basket, making sure the flat rubber tab on the air dome is down inside the drain sump opening.
4. The air dome hose is retained to the rear wall of the cabinet with two clips.

NOTE: *A silver indicator mark is located approximately 20 inches away from the air dome. The indicator mark must be located under the lower clip to allow the correct amount of slack in the hose.*

5. Remove all slack in the hose between the upper and lower clips holding the air dome hose. This reduces the potential for noise.
6. Route the air dome hose into the center rear hole in the top cover. Route toward the pressure switch and secure the hose to the pressure switch.

DISPENSER ASSEMBLY

The dispenser assembly is located in the plastic front shroud. Two bays dispense the fabric softener and bleach into the wash load. A water valve solenoid coil directs the flow of water into each specific bay when required for disbursement into the wash load. When the specific fluid is required, the water is directed into the specific bay. As water fills the bay, the fluid level rises. When the fluid reaches a specific height, the fluid is then siphoned out into the dispenser injector hose to the wash load (*Figure 2-34*).

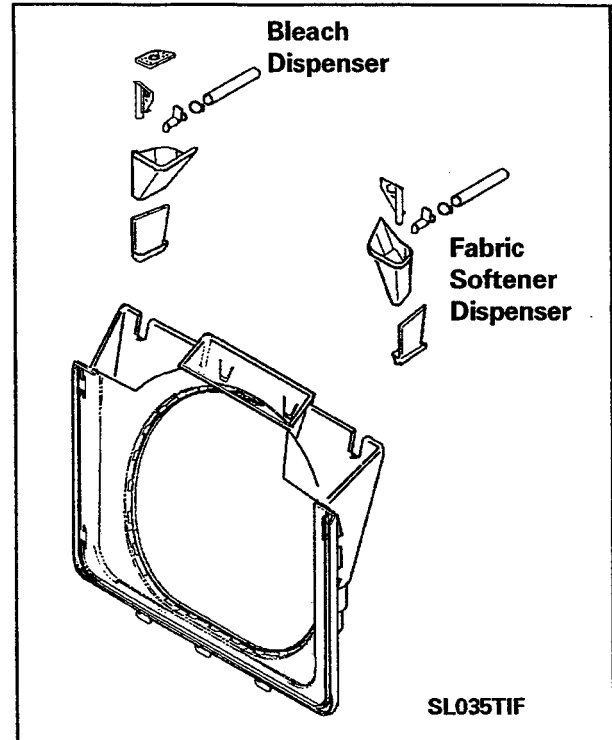


Figure 2-34

Removal

1. Disconnect power to the machine.
2. Follow the same procedures outlined for removal of the plastic front shroud (*See Front Shroud Assembly*).
3. Disconnect the hoses attached to the dispenser assembly.
4. Reverse the procedure for reinstallation.

FRONT WATER FLUME INJECTOR

As water is filling the dispenser assembly, water is also diverted to a hose leading to the front of the outer tub. As the water enters the top of the outer tub through the hose, it passes through a water flume. The flume directs the water toward the front of the tub to saturate the clothes load.

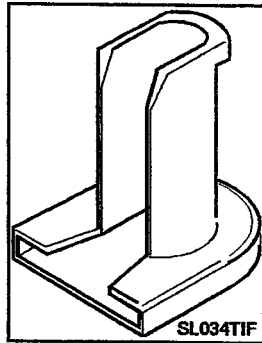


Figure 2-35

Removal

1. Disconnect power to the machine.
2. Remove the front panel (*See Front Panel Removal*).
3. Remove the front shroud assembly (*See Front Shroud Assembly Removal*).
4. Remove the outer tub cover (*See Outer Tub Cover Removal*).
5. Remove the hose clamp and injector hose from the spout on the front upper area of the outer tub.
6. In order to provide sufficient space to remove the injector, place a 5/8" - 3/4" wedge between the spinner and the outer tub.
7. Pinch the two tabs exposed on the outer edge of the outer tub spout and press the injector into the tub. Reverse the previous steps to replace the injector.

PUMP ASSEMBLY

The pump assembly is mounted to the right rear area of the base.

Removal

1. Disconnect power to the machine.
2. Spread a towel below the drain hoses prior to loosening the hose clamps. This will catch any residual water left in the hoses and sump area.
3. Remove the hose clamps and hoses from the pump.
4. Remove the wiring harness from the pump motor terminals.
5. Rotate the pump assembly in a counter-clockwise direction. The support legs of the pump are slotted to engage in keyed slots in the base. Reverse the steps to re-mount the pump (*Figure 2-36*).

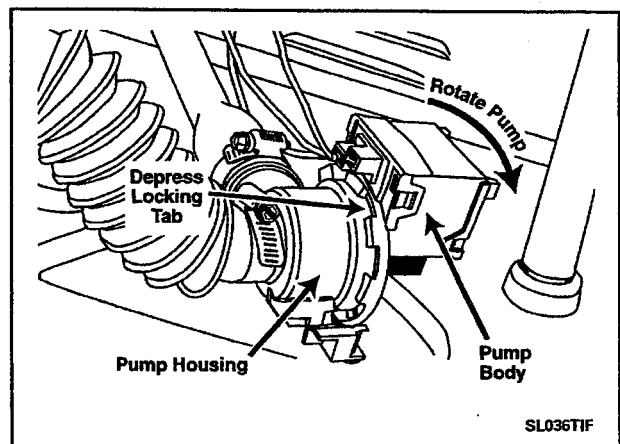


Figure 2-36

NOTE: *Torx screws are used on later models instead of the "locking tabs."*

Cleaning the Pump

The pump assembly can also be disassembled without removing the hoses from the pump (*Figure 2-37*).

1. Depress the locking tab or remove the torx screws (T15) on the face of the pump housing.
2. Rotate the block portion of the pump containing the motor windings toward the front of the washer. This will disengage the locking tabs of the pump housing from the pump face.
3. Carefully remove the pump body away from the housing. Now, the drain impeller is exposed for cleaning.

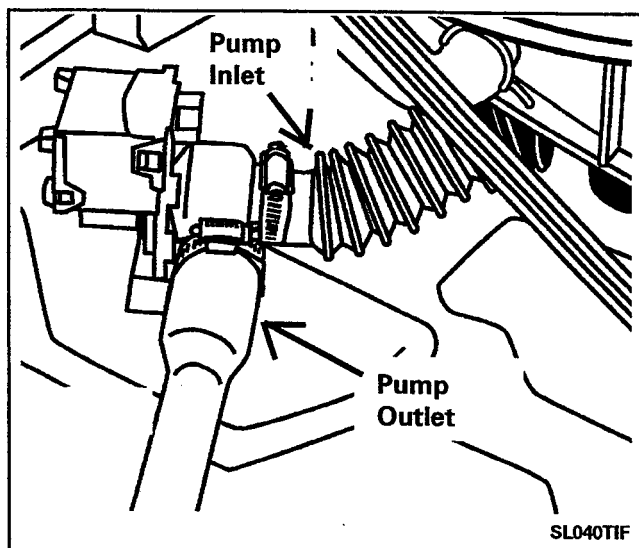


Figure 2-37

INSTALLATION - PUMP ACCESSORY KIT

1. Disconnect power to the machine.
2. Disconnect the drain hose from the existing pump in the washer.
3. Attach the accessory connector to the pump drain outlet and secure with the clamp found in the kit.

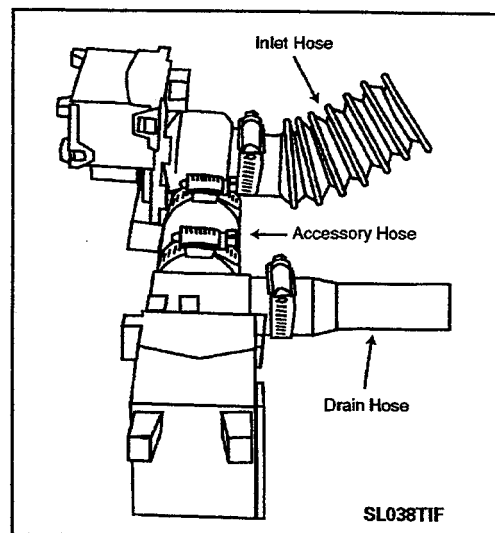


Figure 2-38

4. Position the second pump near the first pump and connect the accessory connector to the sump intake of the second pump. Secure with the clamp in the kit (*Figure 2-38*).
5. Connect the drain hose to the drain outlet of the second pump. Secure with a clamp.
6. The second pump assembly is not secured to the washer's base frame.
7. Installation is complete.

DRAIN HOSE

The drain hose attaches to the pump and is routed through the lower rear wall of the cabinet. The drain hose is protected externally by a shield.

Removal

1. Disconnect power to the machine.
2. Remove the four 1/4" hex-head screws securing the access panel to the rear wall of the cabinet.
3. Remove the 1/4" hex-head screw securing the drain hose shield. Remove shield (*Figure 2-39*).

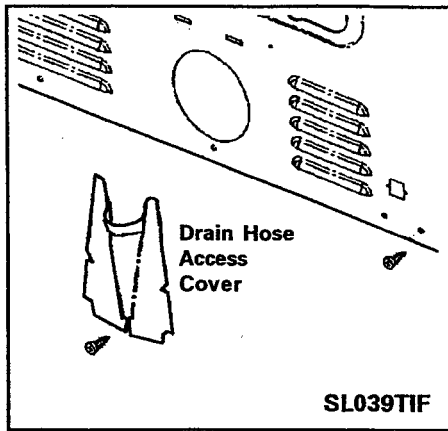


Figure 2-39

4. With access into the machine compartment, spread a towel under the connection of the drain hose to the pump. Loosen the clamp and remove the drain hose (*Figure 2-40*).
5. Reverse the previous steps for replacement.

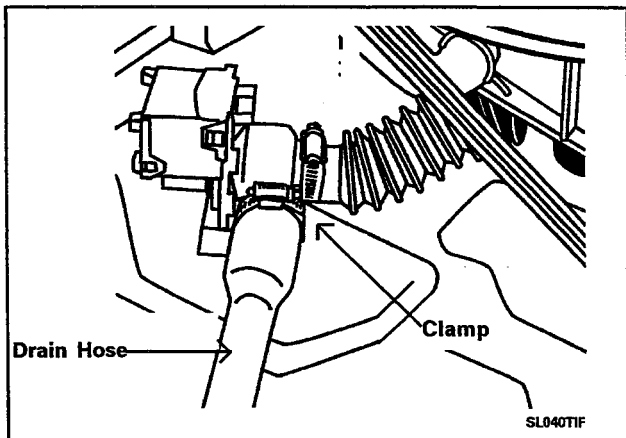


Figure 2-40

BAFFLES

The baffles in the spin basket distribute the clothes during the tumbling action of the washer.

Removal

1. Disconnect power to the machine.
2. The three rear baffles within the spin basket are removed by removing the two crosshead screws securing each baffle from inside the spin basket.
3. The three front baffles within the spin basket are removed by removing the two $\frac{1}{4}$ " hex head screws from outside of the spin basket. To gain access, remove the outer tub cover. The front baffle mounting screws can now be reached through the sump area, using a flat ratchet with a $\frac{1}{4}$ " drive socket.

DOOR BOOT

The door boot rubber gasket provides a seal between the outer tub assembly and the front shroud. The boot seal is secured to the front shroud by locking tabs on the boot seal, which engage with slots in the shroud. Attachment to the outer tub is by a wire loop stretched around the perimeter of the opening in the outer tub cover and secured with a spring.

Removal

1. Disconnect power to the machine.
2. Remove the front shroud (*See Front Shroud Assembly Removal*).
3. Using one of the two front support suspension springs, grasp the hook of the boot clamp spring. With the other hand, press the wire loop into the door boot. This will brake the wire into the door boot and not allow the wire to slip.

NOTE: *Be careful not to bend or crease the wire loop. If the wire loop becomes bent, the result will be a potential leak upon replacement of the boot seal onto the outer tub cover.*

4. Pull the boot clamp spring hook toward the wire loop and disengage the spring from the wire loop.
5. Carefully remove the wire loop from the lip of the outer tub cover.

NOTE: *Note the orientation ribs on the outer tub cover and the locating notches in the door boot seal lip.*

6. Unsnap the locking tabs of the door boot around the inside perimeter of the door shroud (*Figure 2-41*).

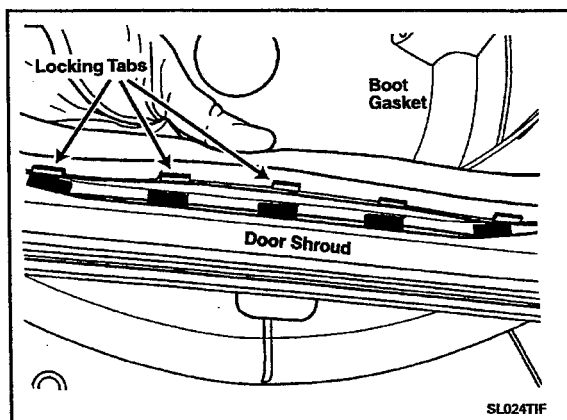


Figure 2-41

Replacement

1. Align the door boot with the D-shape toward the front with the flat of the D toward the bottom. Also, locate the large tab toward the top center of the shroud.
2. Stretch the rear lip of the door boot onto the tub cover.
3. Move the rear door boot lip along the face of the tub cover until the locator notches in the door boot align with the locator ribs in the tub cover. Check alignment of the six rib marks and reposition if necessary. This is necessary in order to have the locking tabs on the inside perimeter of the door boot align with the corresponding tabs on the front shroud.
4. Carefully loop the wire loop with spring around the lip of the outer tub cover and place the spring at the 11:00 o'clock position, just left of the top rib of the outer tub cover. Hook the end of the spring over the nearest tub cover clip to hold the spring and wire in position for final hookup to the other end of the wire loop.
5. Using either the hold down bracket or the outer tub spring, grasp the hook end of the spring and apply pressure on the clamp wire into the door boot.
6. Pull the spring hook toward the wire loop, to engage the spring with the wire loop.

NOTE: *Be careful not to bend or crease the wire loop. If the wire loop becomes bent, the result will be a potential leak upon replacement of the boot seal onto the outer tub cover.*

7. Reposition the front shroud on the front of the washer and secure (*See Front Shroud*).

- Pull the front edge of the door boot and locate the widest locking tabs, located at the 12, 4 & 8 o'clock positions. Insert the locking tabs into the large interlocking slots in the shroud. (Spraying the surface with window cleaner or a soap solution aids reinsertion of the tabs into the plastic front shroud.) Press the thick rubber section of the door boot into the groove in the shroud so the locking tabs engage in the slots.

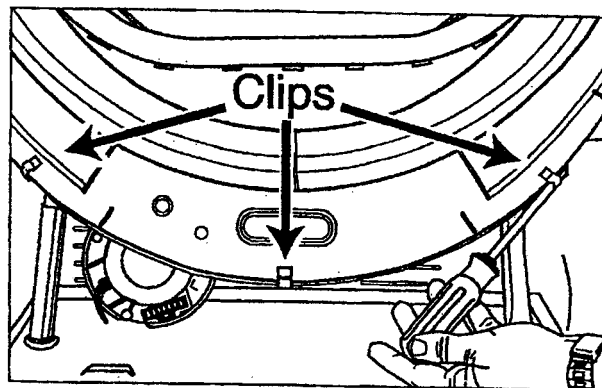


Figure 2-42

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- Press the remaining locking tabs into the perimeter of the shroud.

OUTER TUB COVER

The outer tub cover has a gasket seal embedded in the outer flange of the cover to seal the cover to the outer tub. The cover is secured to the outer tub by means of twelve (12) locking clips evenly spaced around the perimeter of the cover. When the outer tub cover is removed, access to the sump area and the front injector flume is possible.

Removal

- Disconnect power to the machine.
- Remove the front shroud and shroud bridge support assembly (*See Front Shroud Assembly Removal*).
- Using a flat-bladed screwdriver, slide under the clip and pry to remove. Remove the remaining clips from the outer tub cover (*Figure 2-42*).
- Remove the cover from the outer tub. This exposes the sump area on the floor of the outer tub and the water injector flume on top of the outer tub.

SPIN BASKET ASSEMBLY w/ BALANCE RING

The balance ring is securely fastened to the spin basket and cannot be obtained as a separate repair part. To obtain, order spin basket assembly complete. The balance ring is filled with a calcium chloride solution and baffles within the ring allow the fluid to disperse within the ring evenly. By rotating the spin basket, you can hear the fluid dispersing within the baffles of the balance ring. This sound is normal (*Figure 2-43*).

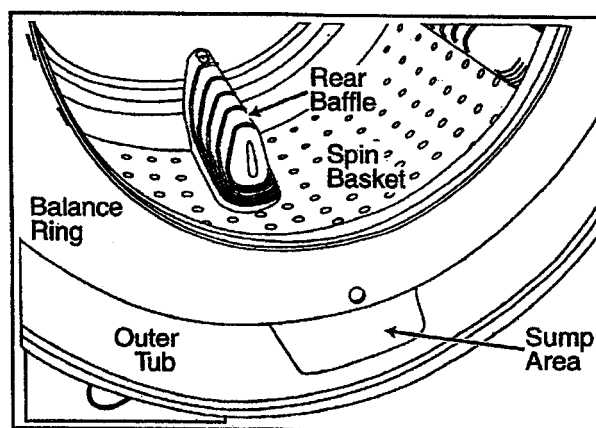


Figure 2-43

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The spin basket is mounted to the spinner support by means of threaded studs on the support extending through the spin basket and secured with nuts. The mounting nuts are concealed under the rear baffles (*Figure 2-44*).

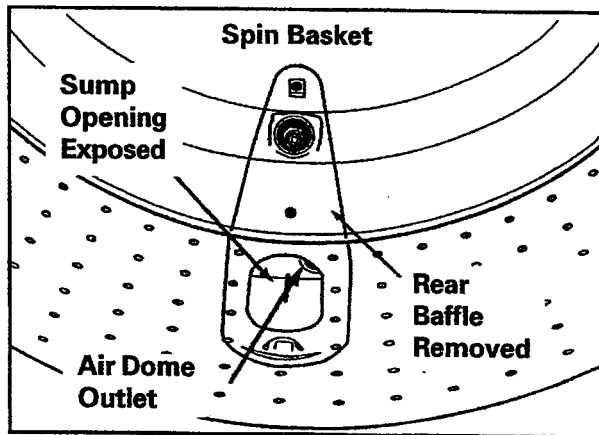


Figure 2-44

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Removal

1. **Disconnect power to the machine.**
2. Remove the front panel, top cover, front shroud, outer tub cover and rear baffles (*See Front Panel, Top Cover, Front Shroud, Outer Tub Cover and Rear Baffle Removal*).
3. To separate the spinner tub support from the spinner, remove the three rear baffles within the spin basket by removing the two screws securing each baffle (*See Baffle Removal*).
4. Remove the three locking type nuts ($\frac{1}{2}$ " socket) securing the spin basket to the spider assembly (*Figure 2-45*).

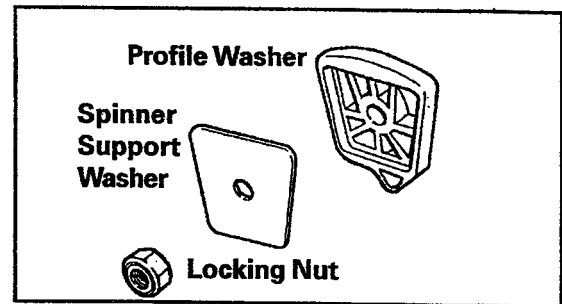


Figure 2-45

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5. Remove the spin basket by lifting it off the threaded bolts of the spinner support.
6. When replacing the spin basket onto the spinner support, replace the washers under the three locking type nuts. Secure the $\frac{1}{2}$ " nuts firmly (18 in. lbs. torque).

DRIVE PULLEY

The drive pulley can be reached from behind the rear access panel of the washer. The pulley is secured to the shaft of the spider assembly by a bolt. The direction of pulley rotation controls the spin action of the spin basket.

Removal

1. **Disconnect power to the machine.**
2. Remove the rear access panel from the washer to access the pulley area.
3. Remove the bolt and the spider shaft will be exposed. Carefully slide the pulley off the spider shaft, using a "rocking/side-to-side" motion. If the pulley has a snug fit, use your Spanner Wrench to apply enough leverage to pry the pulley off the shaft (*Figure 2-46*).

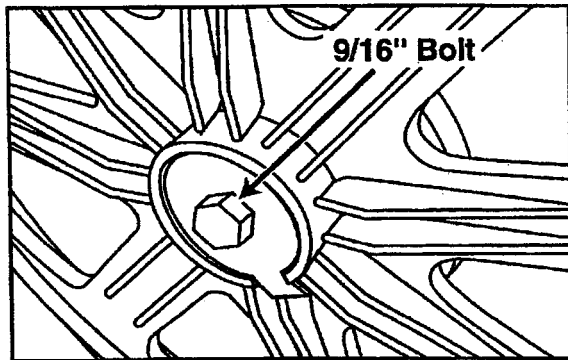


Figure 2-46

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Replacement

1. Slide pulley on shaft.
2. Insert new tabbed washer and secure the bolt with a 9/16" socketed ratchet wrench (33 ft. lbs. torque).

NOTE: *If the washer is cupped, flip the washer on the pulley so the cupped portion extends away from the shaft. Failure to do so can result in a binding of the spinner support shaft and seals.*

SPINNER TUB SUPPORT

The spinner tub support attaches to the spin basket and the shaft of the spider extends through a seal system to the exterior of the outer tub with a pulley attached to the end of the shaft (Figure 2-47). This assembly supports the spin basket and transfers the rotation of the drive pulley directly to the rotation of the spin basket.

NOTE: *When the spinner tub support is removed, the shaft seal system should be replaced.*

Removal

1. Disconnect power to the machine.
2. Remove the front panel, top cover, front shroud and outer tub cover (*See Front Panel, Top Cover, Front Shroud and Outer Tub Cover Removal*).
3. Remove the drive pulley (*See Pulley Removal*).
4. With the pulley removed, the spin basket with the spider shaft can be pulled from the front of the outer tub assembly.
5. To separate the spinner tub support from the spinner, remove the three rear baffles within the spin basket by removing the two screws securing each baffle (*See Baffle Removal*).
6. Remove the three locking nuts (1/2" socket) securing the spin basket to the spider assembly.
7. Remove the shaft seal (*Figure 2-48*).

Replacment

1. Reverse the previous steps.
2. **IMPORTANT:** *Secure the three locking nuts (1/2" socket) on the spinner tub support studs (18 in. lbs. torque).*

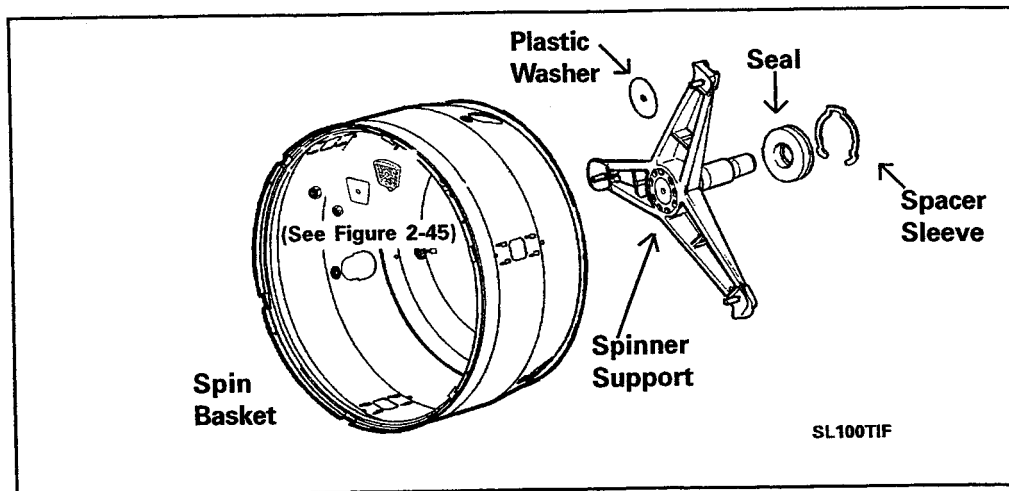


Figure 2-47

SEAL SYSTEM

A multi-lipped water seal is positioned on the tub support shaft leading to the outer tub bearing. This prevents water inside the tub from reaching the bearings. The water seal is accessed by removing the tub support shaft. It is comprised of a stainless steel seal face positioned on the tub support shaft, which mates with a rubber gasket. Grease on the face of the rubber gasket provides lubricant for the steel seal face. The steel seal face provides the rotating seal surface against the circular rubber ribs in the face of the rubber seal. This makes for three rib contacts at various diameters, providing three seals.

Removal

1. Disconnect power to the machine.
2. Remove the spinner tub support with spinner (See *Spinner Tub Support Removal*).
3. With a flat bladed screwdriver, pry the seal carefully off the tub support shaft (Figure 2-49).
4. Reach into the inside of the outer tub bearing area and remove the rubber seal. Discard both the steel seal washer and the rubber seal (Figure 2-48).

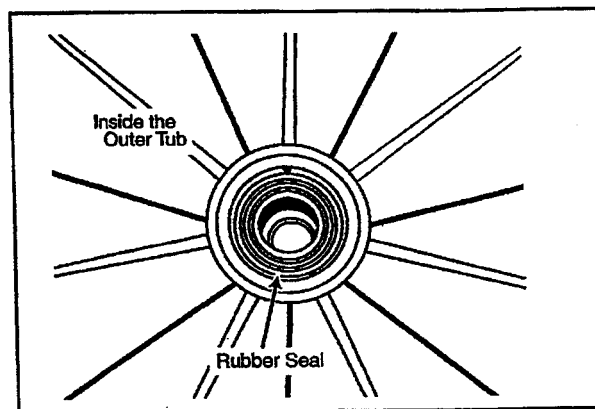


Figure 2-48

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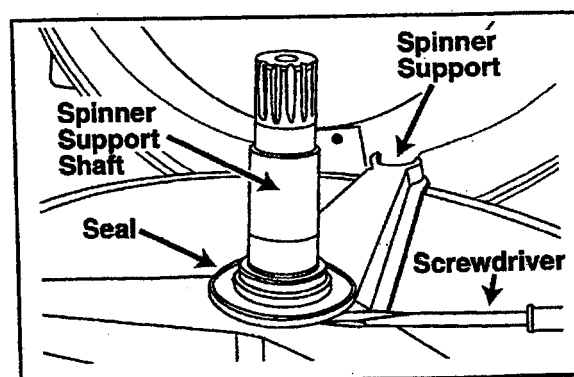


Figure 2-49

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5. Position the spacer, replacement rubber seal and steel seal washer into the outer tub bearing area (Figure 2-49).

6. Position the spinner with spinner support shaft into the outer tub and insert the shaft through the seal in the rear of the outer tub until the spinner support shaft seats into place.
7. Reposition the drive pulley with tabbed washer onto the spinner support shaft. Insert the retaining bolt and tighten securely (33 ft. lbs. torque). This will draw the shaft and seals into proper alignment.

OUTER TUB ASSEMBLY

The outer tub assembly is suspended from two springs positioned toward the upper front of the cabinet and supported in the rear by two struts which are secured to the base frame. Two counter weights are mounted to the outer tub from above and below the tub. The aluminum bearing housing retains both inner and outer bearings for the spinner tub support shafts (*Figure 2-50*).

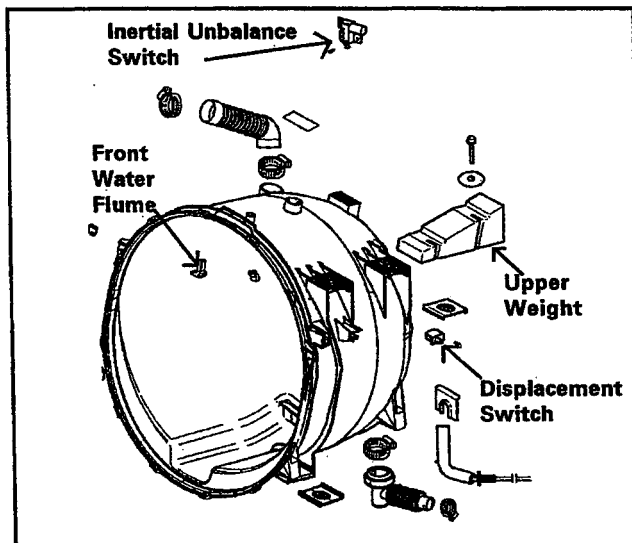


Figure 2-50

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BEARINGS

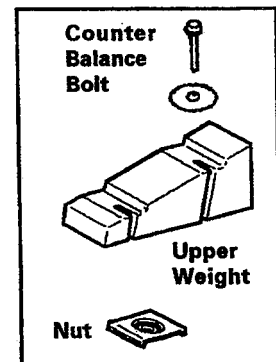
The bearings are not repairable or replaceable. Replacement of the complete outer tub assembly is required.

COUNTER WEIGHTS

Two counter weights are secured to the outer tub assembly. One is secured to the top of the tub assembly and the other is secured to the bottom of the tub assembly.

Removal of Upper Weight

1. Disconnect power to the machine.
2. Lift top cover (*See Top Cover*).
3. Remove the two 1/2" counter balance bolts securing the weight to the top of the outer tub assembly.



NOTE: The bolts screw into two nuts below the weight, under the tub mounting pad (*Figure 2-51*).

Figure 2-51

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Removal of Lower Front Weight

1. Remove the front panel (*See Front Panel*).
2. Remove the two bolts securing the weight to the outer tub assembly. Use a 9/16" socket (*Figure 2-52*).
3. Lower the front weight and guard against hitting the motor control microprocessor board mounted to the base assembly.

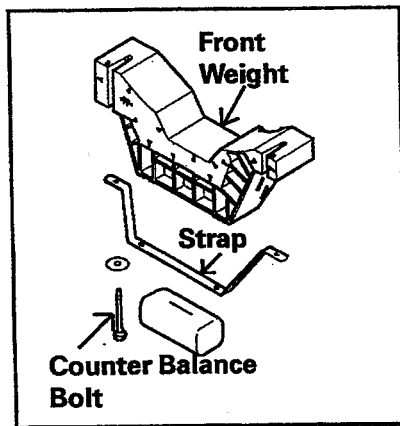


Figure 2-52

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4. Lean the cabinet of the washer forward to access the two locking nuts that secure the struts to the bottom of the base frame assembly. Use an 8mm or 1/2" socket. Remove the locking nuts and lower strut washers.
5. With the washer standing upright, roll the washer forward and off the struts, which mount into the rubber isolators inserted into the rear of the outer tub.
6. **To Reinstall:** Reverse the previous steps.

STRUT DISPLACEMENT SWITCH

1. **Disconnect power to the machine.**
2. Remove the rear access panel for immediate access or remove the front panel.
3. Remove the wires to the switch.
4. Release the small locking tab on top of the switch and rotate the switch to disengage the switch from the strut.
5. **To Reinstall:** Reverse the previous steps.

STRUT ASSEMBLY

Two struts are mounted to the base and inserted into rubber isolators in the rear of the outer tub assembly. The struts provide suspension support to the outer tub assembly (*Figure 2-53*).

Removal

1. **Disconnect power to the machine.**
2. Remove the front panel, top cover and front shroud (*See Front Panel and Front Shroud Removal*).
3. Disconnect dispenser hoses and injector hose connections to the outer tub.

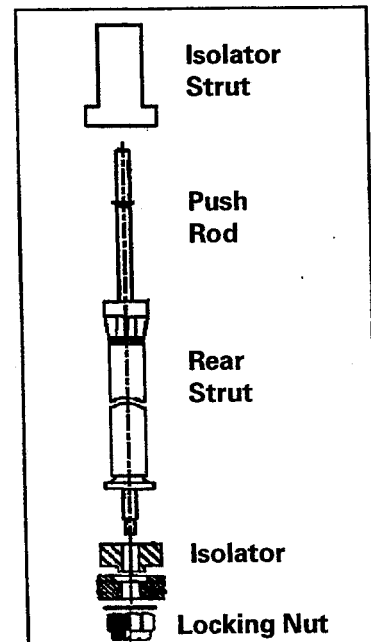


Figure 2-53

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INERTIAL UNBALANCE SWITCH

The purpose of the switch is to monitor the lateral horizontal movement of the outer tub during spin (above 500 RPM), versus the vertical movement. When a severe amount of motion is detected, the machine control will implement a reduction in speed or start a redistribution of the clothes load. This is done by gradually stopping the motor. After the motor stops, the tumbler will alternately tumble, first one direction then another. After a brief time, the machine will again work up to a full spin. If sensed again, the machine control will implement another redistribution of the load.

Removal

1. Disconnect power to the machine.
2. Remove the front panel and lift the top cover (*See Front Panel Removal*).
3. The switch is located on the upper right hand side of the outer tub assembly.
4. Remove the two screws securing the switch to the outer tub assembly (*Figure 2-54*).

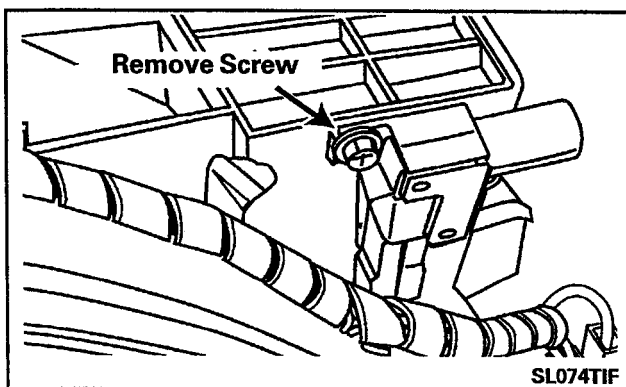


Figure 2-54

TUB DISPLACEMENT SWITCH

The displacement switch is located on the right hand side of the outer tub assembly, below the upper weight. Location of the switch on the outer tub will activate the switch whenever the outer tub assembly makes contact with the wall of the cabinet. Should contact with the cabinet occur before the machine reaches 500 rpm, the machine control is alerted and will reduce speed to implement a redistribution program.

Removal

1. Disconnect power to the machine.
2. Remove the front panel and lift the top cover (*See Front Panel Removal*).
3. The switch is located on the upper right hand side of the outer tub assembly, directly behind the right upper front suspension spring (*Figure 2-55*).
4. Remove the screw and flat washer securing the switch in place.
5. Using a flat-bladed screwdriver, pry the switch body from the outer tub.

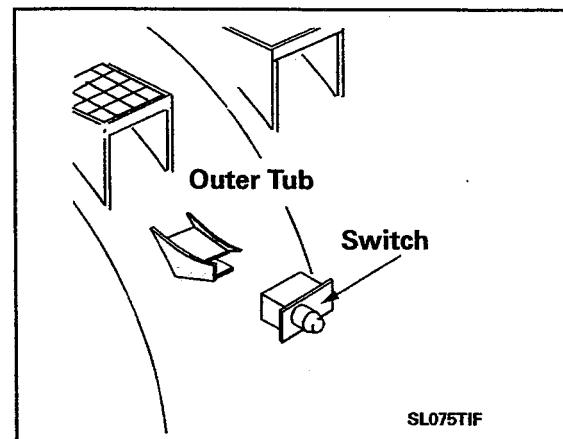


Figure 2-55

LOWER WEIGHT UNBALANCE SWITCH

The unbalance switch is located on the lower front face of the lower weight. Location of the switch will activate if the tub begins a forward to back motion and will trip, causing the machine to reduce spin speed and implement a redistribution program to balance the clothes load. The switch is wired in series between the outer tub displacement switch and the inertial unbalance switch (*Figure 2-56*).

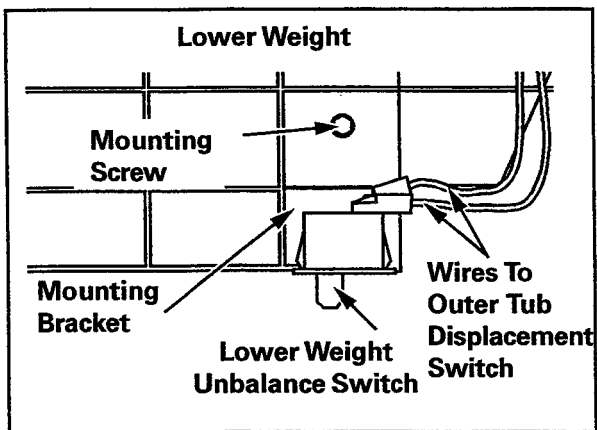


Figure 2-56

MOTOR DRIVE SYSTEM (WASHER)

The motor drive system tear down procedure covers all components related to the drive system, such as the drive motor, motor control, drive belt, machine control and accelerometer switch.

BELT

The drive belt has six (6) ribs which mate with the face of the motor pulley. The belt encircles the motor pulley and also the drive pulley of the spinner (*Figure 2-57*).

Removal

1. Disconnect power to the machine.
2. Roll the belt off the drive pulley and remove from the motor pulley.

Adjustment

1. No adjustment is necessary. The belt is designed to stretch and adapt to proper adjustment between the drive pulley and the motor pulley.

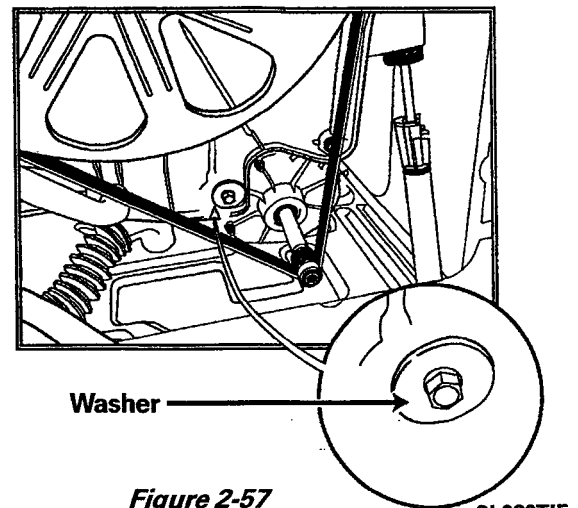


Figure 2-57

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MOTOR

The drive motor is hinged into the left bottom area of the outer tub and secured to the outer tub by the bolt on the belt adjustment wheel. A slot in the mounting bracket of the outer tub allows the motor to pivot and allows adjustment of the drive belt tension.

Removal

1. Disconnect power to the machine.
2. Remove the front panel, rear access panel and the front weight (*See Front Panel & Rear Access Removal*).
3. From the rear, locate and remove the motor mounting bolt securing the washer to the outer tub (*Figure 2-58*).
4. Lift the motor slightly to disengage the belt from the motor pulley. Grasp the motor and slide it carefully from the pivot hang holes in the outer tub. Place motor on the base frame (*Figure 2-59*).

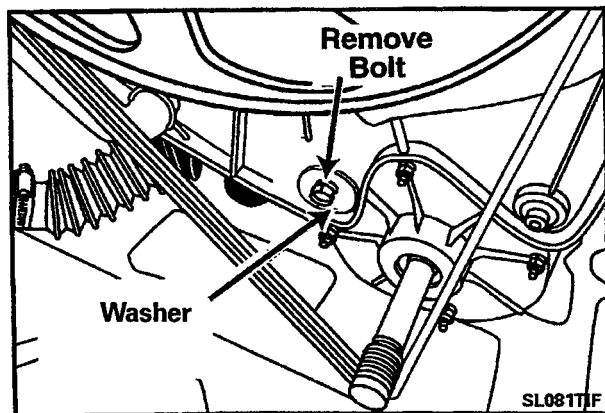


Figure 2-58

5. From the front, remove the wire harnesses from the back of the motor.

Replacement

1. Reverse the previous procedures to re-mount the motor.

NOTE: *Prior to hanging the motor, reconnect motor wire harnesses and ground wire.*

2. Prior to hanging the motor on the outer tub, check the positioning of the rubber motor mounts.

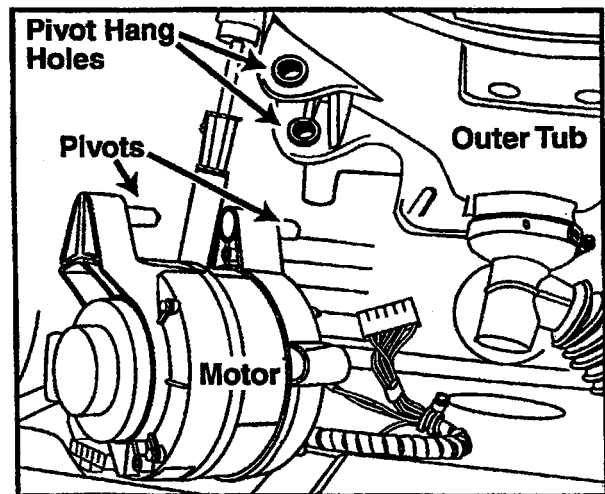


Figure 2-59

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DRIVE MOTOR

The drive motor is a switched reluctance type motor. The basic operating principle of the switched reluctance motor is direct magnetic attraction between the stationary electromagnetic coils (stator) and a specially configured rotor or armature (*Figure 2-60*). The rotor is made up of stacked plates or laminations mounted on a center shaft. The shape of these laminations are characteristic of the switched reluctance motor. The rotor, when viewed from the end of the rotor, has "teeth" much like a gear. These "teeth," or pole pieces, are pulled as the result of direct current power through the stator coils.

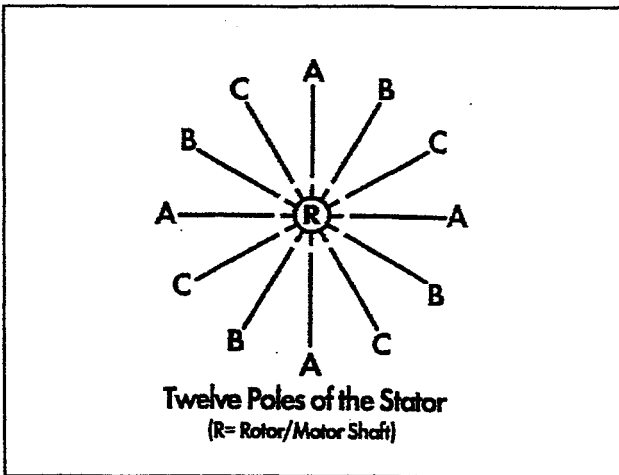


Figure 2-60

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Multiple stator coils are positioned around the rotor and are connected in three different phased "sets" of paired coils.

Magnetic attraction causes the rotor poles to turn toward the coils. The electronic motor control board switches the magnetic field off just as the rotor pole piece approaches and then turns on another set of coils further ahead. It is this switching action of motor phases that determines direction and rotational speed of the rotor (and shaft). The motor control board changes the 120 VAC voltage line input to 170 VDC, and distributes the current phases to the stator coil sets in sequence to the drive motor.

The following illustration shows the motor terminals for each of the coils involved. The letters with positive and negative symbols indicate the motor phase circuitry of the terminals.

Refer to section titled Motor Control for board identification of A, B and C terminal/harness identification (*Figure 2-61*). Also, see the wiring schematic for harness identification.

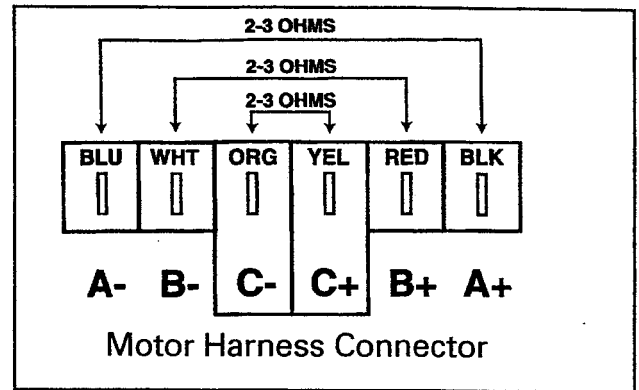


Figure 2-61

MOTOR CONTROL BOARD & TESTING

The motor control board receives 120 VAC voltage from the dryer line cord and distributes DC voltage to the drive motor. The motor control converts the voltage from single phase to 3 phase for the drive motor.

Another purpose of the motor control is to monitor the drive motor speed through a tachometer circuit linking the motor control board to a tachometer on the drive motor. This is a 3-wire circuit comprised of a Black, Blue and White wire harness. Failure of this circuit will cause the motor to start jerking in place or accelerate rapidly for up to 5 seconds. This occurs whenever the tachometer in the drive motor is trying to locate the proper shutter and sensor sequence. For example, if the tachometer signal is lost from the motor control to the machine control just prior to spin, the motor will ramp up for 5 seconds then stop.

Motor & Motor Control Test

1. **Disconnect power to the machine & connect a power test cord to the Line & Neutral terminals of the Motor Control board. (*Figure 2-62*).**
2. **Remove JP4 Interface connector wire harness on front end of motor control board.**

3. Plug in the power test cord to a 120 VAC power source. The motor control will immediately execute a test routine and the motor should run, rotating the spinner at 50 rpm.

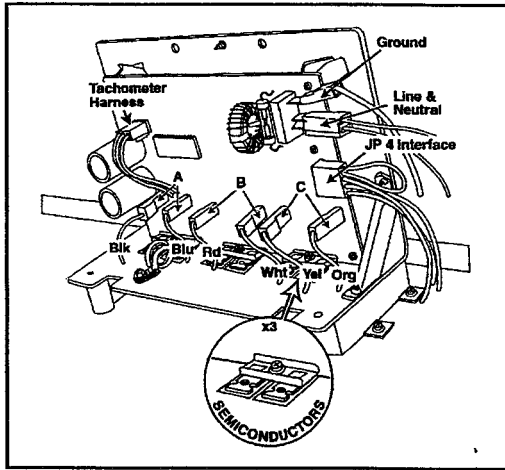


Figure 2-62

8. **If the motor runs, and the spinner rotates at the proper RPM speed, the problem lies outside of the motor and motor control circuit. Disconnect power to the washer and reconnect the JP4 Interface connector to the motor control.**
9. **If the motor does not run:**
 - a. Check the 10 amp fuse located on the control board, either visually or with an ohm meter. If bad, replace motor control/wire harness assembly completely (**Figure 2-62**).
 - b. If the fuse is functioning, check the six semiconductors on the heat sink visually for any damage. If damaged, replace motor control/wire harness assembly complete and check motor windings for damage (**See Drive Motor**). Replace motor if necessary.
 - c. If fuse and semiconductors show no visible damage, perform the Motor Phase Test.

10. Unplug the washer power cord and replace Motor Control Board connector JP4 when finished.

Motor Phase Test

It is possible for the motor to still run, under light loads, when one of the phases of the motor is nonfunctional. A symptom would be the motor being noisier, possibly creating a growling noise. Also, because it is out of phase, the motor torque is less. This could result in a customer complaint that the load is not spinning out properly or it does not tumble consistently with a large load. (**See also Section 4: Troubleshooting**)

To gain access to the Motor Control Board terminals: (**Figure 2-62**)

1. **Disconnect power to the machine.**
2. Remove the two screws securing the Motor Control Assembly to the base and un-snap the two twist lock wire ties restraining the motor to motor control board harness base.
3. Remove the green ground wire, Line & Neutral wires and the JP4 connector from the Motor Control Board.
4. Carefully lift the front end of the motor control board to disengage the rear locking tabs from the slots in the base. Slowly drag the Motor Control Board with motor harness attached, toward the front of the washer and lay in front of the washer.

5. Remove the screw securing the splash shield covering the face of the Motor Control Board. Pivot the splash shield with top screw in the Motor Control Board metal frame, allowing the plastic shield to become an electrical shield between the Motor Control board and the base.
6. Connect the power test cord to the Ground wire, Line 1 and Neutral wires. (Leave the JP4 connector off the board.) *(Figure 2-62).*
7. **Check Phase C** by disconnecting the yellow or orange wire at the Motor Control board. Plug in the motor test cord into the wall socket. If the motor operates with a slight growling sound, phases A and B are operating correctly. Reconnect phase C and test with phase B disconnected. If the motor does not run properly, phase A or B is not functioning. Perform the motor windings check *(See Motor Windings Check).*
8. **Check Phase B** by disconnecting the white or red wire at the Motor Control board. Plug in the motor test cord into the wall socket. If the motor operates with a slight growling sound, phases A and C are operating correctly. Reconnect phase B and test with phase A disconnected. If the motor does not run properly, phase A or C is not functioning. Perform the motor windings check *(See Motor Windings Check).*
9. **Check Phase A** by disconnecting the black or blue wire at the Motor Control board. Plug in the motor test cord into the wall socket. If the motor operates with a slight growling sound, phases B and C are operating correctly. Reconnect phase A and test with phase B disconnected. If the motor does not run properly, phase A or B is not functioning. Perform the motor windings check *(See Motor Windings Check).*

PHASE	WIRE COLORS	MOTOR CONDITION	RESULT/SOLUTION
C	Yellow or Orange	Runs Does Not Run	-Phases A&B are operating correctly. (Check Phase A and B) -Phase A or B is non-functional. (See Step 10)
B	White or Red	Runs Does Not Run	-Phases A&C are operating correctly. (Check Phase A and C) -Phase A or C is non-functional. (See Step 10)
A	Black or Blue	Runs Does Not Run	-Phases B&C are operating correctly. (Check Phase B and C) -Phase B or C is non-functional. (See Step 10)

MOTOR WINDINGS CHECK

1. Unplug the washer power cord.
2. Remove each pair of phase wires from the motor control and perform an ohms check of each wire leading to the motor. Each wire pair should show 2-3 ohms resistance (*Figure 2-61*).
2. There should be no continuity between any of the terminals and the frame of the motor.
3. Check that all six motor terminals are secure and at the same height in the connector housing. Replace motor if terminals are pressed into the motor.
4. Remount the six-position motor connector onto the motor, reassemble the drip shield cover onto the motor control.
5. Reposition the motor control into the washer when finished. Make sure the two screws and the twistlock wire ties are fastened properly to the wire harness.

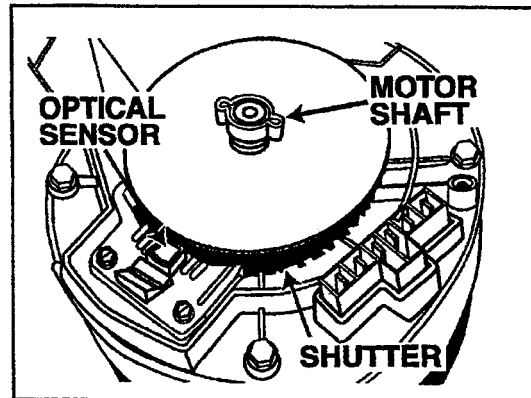


Figure 2-63

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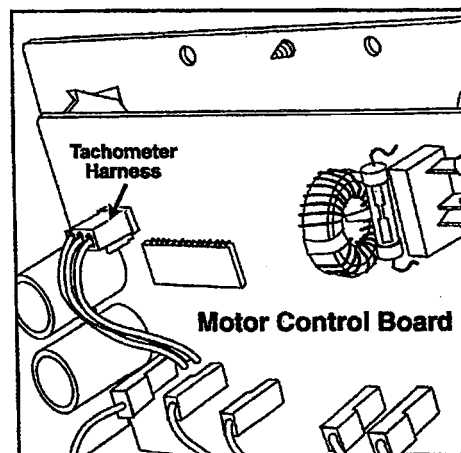


Figure 2-64

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Tachometer Circuit Diagnostics

The tachometer system of the motor is comprised of a plastic wheel, called a shutter, and an optical sensor (*Figure 2-63*). The shutter is mounted to the end of the motor shaft under the plastic endbell covering of the motor. The edge of the shutter resembles a "picket fence" with different size "pickets." The pattern consists of six different "pickets" which are repeated eight times. An optical sensor is mounted to one side of the shutter and monitors the "pickets" as they pass through the sensor.

As the "pickets" pass through the sensor field, signals are generated and are transmitted to the motor control board through the tachometer wire harness (*Figure 2-64 and 2-65*).

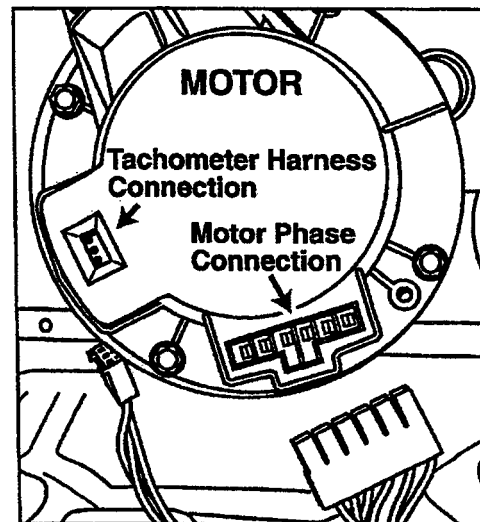


Figure 2-65

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The motor control monitors the signals and communicates this information to the machine control. The purpose of this signal is to tell the motor when to energize each winding in the motor and to tell the machine control the actual motor speed.

Note: *If the machine control board does not receive an input signal from the motor control/tachometer circuit (JP4 connector), the motor speed will rapidly accelerate for 5 seconds then shut down. The machine control will sense a "locked rotor" condition and the motor will stop. If the motor control does not receive an input signal from the motor, the motor will "jerk" for 5 seconds then shut down.*

1. Inspect the motor control wire harness for integrity of the connections on both ends. The harness is comprised of a White, Blue and Black wire.
2. **Disconnect power to the machine** & connect a power test cord to the Line & Neutral terminals of the Motor Control board (*Figure 2-62, page 2-28*).
3. Press the Start/Off button. The unit will be powered up without activating the motor. Leave the tachometer harness on the motor control and insert the meter probes into the backside of the tachometer harness.

The following table indicates voltage checks of the tachometer harness between the motor and motor control board.

Tachometer Wire Checks	Voltage Found	Condition Of Component
White to Black (From Motor Control)	11 VDC (± 2.5 VDC)	Good Motor Control Board
White To Black (From Motor Control)	0 VDC	Bad Motor Control Board
White To Black (From Motor Control)	+ 13 VDC or <9VDC	Bad Motor
Blue to Black (From Drive Motor)	No change in DC volts as motor is turned slowly	Bad Motor
Blue to Black (From Drive Motor)	Voltage changes from 0 - 5 VDC volts as motor is turned slowly.	Good Motor

UNBALANCE CONTROL SYSTEM

The unbalance control system is comprised of the inertial switch, outer tub displacement switch, strut displacement switch and a cabinet vibration sensor mounted to the machine control board. The three switches are wired in series on a 24 VDC circuit, monitored by the machine control board. The sensor is mounted on the machine control board.

Software in the machine control board will begin monitoring the switches when the spin speed reaches 90 rpm. The inertial unbalance switch monitors outer tub vibrations above 150 rpm.

Inside the door is a cabinet vibration absorber designed to counter the vibration of the tub and serve as a tuned absorber for the whole washer.

Whenever a displacement switch is tripped, the machine stops and redistributes the clothes load. This involves a three (3) second pause, followed by a five (5) second reverse tumble (47-49 rpm) to redistribute the clothes load. The washer will pause again for three (3) seconds, then start the Distribution Profile again. To redistribute the load, the machine tumbles the load (50-90 rpm) and again attempts to pass through critical (about 150 rpm). The machine will try to redistribute twice as the washer attempts to spin at 800 rpm.

Once the load is properly redistributed and the speed reaches above 500 rpm, the inertial switch and cabinet vibration sensor are used. If the inertial switch or sensor is activated, the washer will drop in spin speed, based upon which level of spin speed the switch activation takes place. See **Figure 2-66** outlining the spin speed categories and the corresponding reduced speeds. If the switches are not activated, the final spin speed will reach a maximum speed of approximately 850 rpm and then drop down to find the optimum performance level, based upon readings taken by the cabinet vibration sensor. The up and down cycling of the motor may confuse the consumer, however, the machine is searching for the optimum spin speed for optimum performance.

<u>RPM</u>	<u>FUNCTION</u>
47	Tumble
47-85	Distribution
90-250	Accelerate Through Critical
250-499	Accelerate Through Critical
500-575	High Speed Acceleration - WILL DROP TO 450 RPM
600-675	High Speed Acceleration - WILL DROP TO 555 RPM
>675	High Speed Acceleration - WILL DROP TO 650 RPM
750-800	TOP SPIN SPEED

Figure 2-66

Tub Displacement Switch

The tub displacement switch is located on the upper right hand side of the outer tub, below the top concrete weight, between the outer tub and the cabinet. The switch senses the outer tub touching the cabinet side as the machine passes through critical. When this switch is tripped, the machine stops and redistributes the load.

Testing the Tub Displacement Switch

- 1. Discontinue power to the machine.**
- Place ohm meter leads across the two terminals of the switch. Depress the button on the switch. If the contacts open, the switch is good. If not, replace the switch.

Strut Displacement Switch

The strut displacement switch is clipped to the top of the left rear strut. The switch senses the outer tub bottoming out on the strut as the machine accelerates above 90 rpm. This is caused by the twisting motion of the outer tub. This switch is needed in addition to the tub displacement switch because the twisting motion may not trip the outer tub displacement switch. Primary cause for activation would be an unbalance at the front and rear of the spinner on opposite sides.

The strut displacement switch is wired in series with the tub displacement switch and causes the same type of redistributions.

Testing the Displacement Switch

- 1. Discontinue power to the machine.**
- Place ohm meter leads across the two terminals of the switch. Depress the button on the switch. If the contacts open, the switch is good. If not, replace the switch.

Inertial Unbalance Switch

The inertial unbalance switch is located on the upper right hand side of the outer tub, in front of the top concrete weight. The switch consists of a moving weight in the switch body, pressing against switch contacts. If unbalance of the outer tub becomes too erratic, the moving weight will open the contacts in the switch. When the machine controller senses the switch opening, the machine controller will reduce the spin speed to 650, 550, or 450 rpm depending on the current speed closest to the level spin speed (i.e. 625 rpm trip would drop to 550 rpm *Figure 2-66*).

Testing the Inertial Unbalance Switch:

Testing of the switch may prove difficult. The switch will not open unless the switch is jerked side to side creating a "G" force of 8 - 9 Ft. lbs.

1. **Discontinue power to the machine.**
2. Place ohm meter leads across the two terminals of the inertial switch. Jerk the switch side to side. If the contacts do not open easily, the switch is good. If the switch contacts are open or easily tripped, replace the switch.

Lower Weight Unbalance Switch

The switch is located on the lower right front corner of the lower weight. The switch consists of a push-button, normally closed, switch wired in series with the outer tub displacement and inertial unbalance switches.

Testing the Weight Unbalance Switch

1. **Disconnect power to the machine.**
2. Place ohmmeter leads across the two terminals of the switch. Depress the button on the switch. If the contacts open, the switch is good. If not, replace the switch.

Cabinet Vibration Sensor

The cabinet vibration sensor is a piezo electric strip mounted to the lower left corner of the machine control board. With a mass attached to the end of the strip, the machine controller monitors the cabinet vibration as the machine reaches top speed. The machine controller uses the vibration sensor to attempt to spin the washer at the optimum speed with the least amount of vibration. Optimum speed changes from machine to machine due to: changes in mass of the absorber; changes in spring rate of the absorber; and changes in the pulley - belt ratio. It can also change from run to run due to the size of the clothes load and type of floor. The sensor finds the optimum speed on every run. The optimum speed will be between 750 and 850 rpm.

Cabinet Vibration Absorber

This is a tuned absorber mounted in the door. The tuned absorber consists of a mass suspended by springs tuned to vibrate at approximately 800 rpm. The mass vibrates 180 degrees out of phase with the vibration of the cabinet. This cancels out much of the vibration caused by the clothes load at 800 rpm (*See Cabinet Assembly*).

DRYER COMPONENTS

DOOR ASSEMBLY & HINGES

The door assembly is reversible.

Removal

1. Open the door and remove the screws in each hinge secured to the inner flange of the front panel in the door opening (*Figure 2-67*).

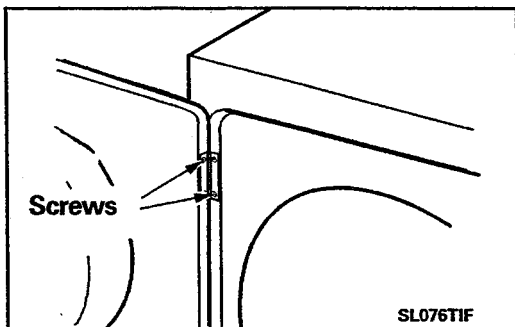


Figure 2-67

Reversal

1. Remove the door assembly from the dryer. Remove the plastic hinge hole covers on the opposite side of the door opening.
2. Remove the hinges from the door itself and relocate them to the other side of the door.
3. Remount the door on the opposite side of the door opening in the front shroud. Secure with two screws into each hinge.
4. Mount the plastic hinge hole covers onto the side where the hinges were previously on to cover the screw holes in the front shroud.

Door Disassembly

1. Remove ten screws located across the bottom and along either side of the door panel. The top edge of the outer door is folded over the inner door plug.

FRONT PANEL

Removal

1. Disconnect power to the machine.
2. Remove the access panel and console assembly (*See Console Removal*).
3. Remove three T-20 screws secured into the lower flange of the dryer front panel.

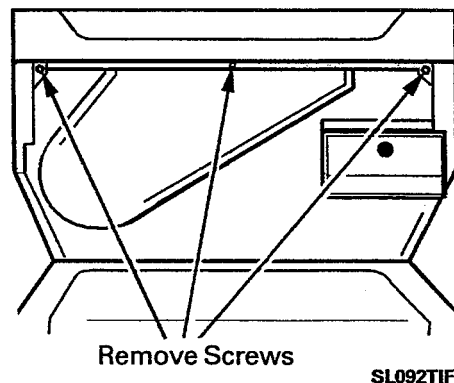


Figure 2-68

4. Remove the two 5/16" hex head screws located in the top right and left front corners of the front panel (*Figure 2-69*).

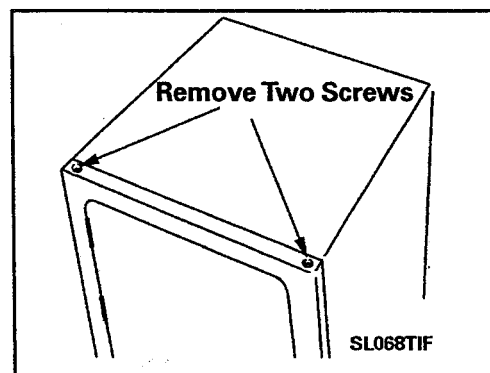


Figure 2-69

5. Tip the top of the front panel forward and slightly lift the front panel at the same time. Then remove the wires from the door switch (*Figure 2-70*).

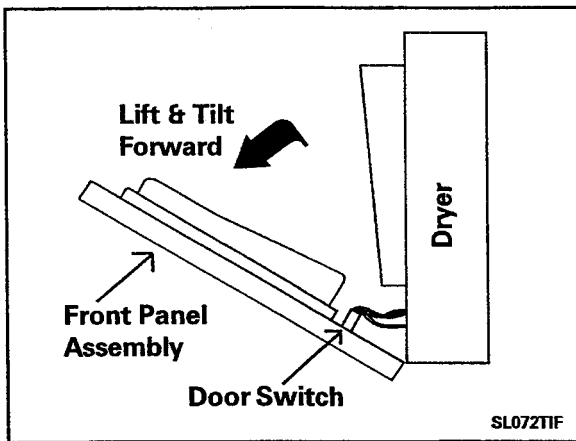


Figure 2-70

6. With the wiring removed from the door switch, continue to tilt the front panel forward while lifting the panel to clear the two lower mounting brackets.

TOP COVER

Removal

1. Remove the dryer front panel (See *Front Panel Removal*).
2. Remove two 5/16" hex head screws in upper front cabinet flange (Figure 2-71).

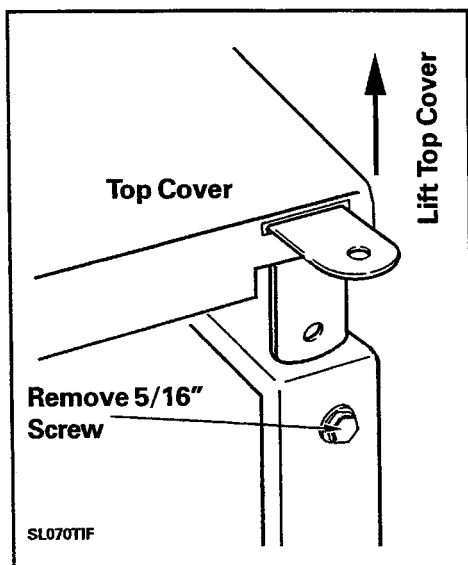


Figure 2-71

3. Remove plastic hole plugs located on top of top cover in rear.
4. Remove two 3/8" hex head screws securing the top cover to the rear cabinet flange (Figure 2-72).
5. Lift rear of top cover and slide top cover forward.

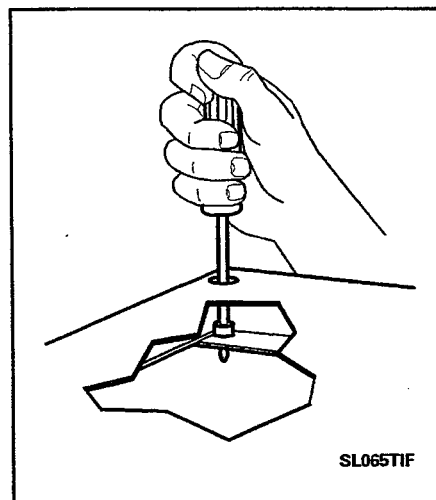


Figure 2-72

SHROUD & TUMBLER FRONT ASSEMBLY

The shroud and tumbler front assembly hold the front of the tumbler in the correct position and provides support for the *Rulon™* bearing surfaces for the front of the tumbler to ride on. The air outlet duct with lint filter is located in the assembly and channels the air from the tumbler into the blower assembly.

Removal

1. Disconnect power to the machine.
2. Remove dryer front panel assembly.
3. Remove wires from door switch and sensor bar.

- Remove six outer screws holding shroud and tumbler front assembly to the cabinet (*Figure 2-73*). The inner screws on the shroud will aid in reinstallation of shroud.

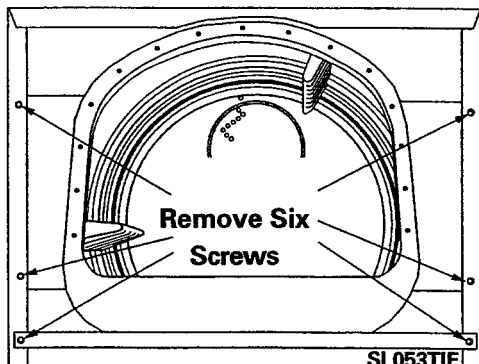


Figure 2-73

- Lift up and pull shroud and tumbler front assembly out and away from tumbler.

Replacement

- Reverse the previous steps.
- Make sure the machine control board wire harness is in front of the shroud bracket.

NOTE: *When reinstalling the shroud and tumbler front assembly, lift the front inner edge of the tumbler to allow the front of the tumbler to rest on the teflon (Rulon™) bearings on the shroud and tumbler front assembly. Also, check the front felt seal to ensure the felt seal is outside the lip of the tumbler.*

Disassembly of the Outlet Duct, Shroud and Tumbler Front

- Remove the shroud and tumbler front assembly from the dryer.
- Remove the four 1/4" hex head screws and the one cross recess countersunk screw securing the outlet duct to the tumbler front.

Note: *Two of the hex head screws are hidden under the felt seal. Pull the outlet duct free from the tumbler front, (*Figure 2-74*).*

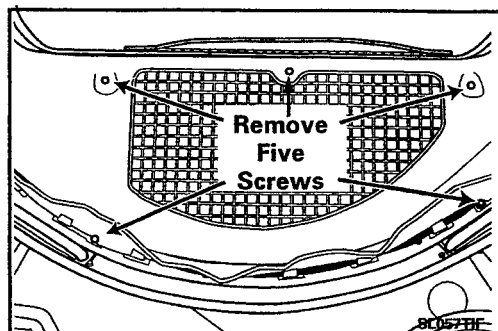


Figure 2-74

- When reattaching the outlet duct assembly to the tumbler front, install the center screw (found above the grid area) first, followed by the four outside screws in any order (*Figure 2-75*).

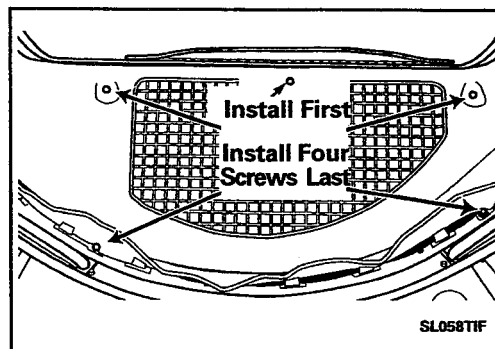


Figure 2-75

LINT FILTER

The lint filter is one piece and can be removed for cleaning (*Figure 2-76*).

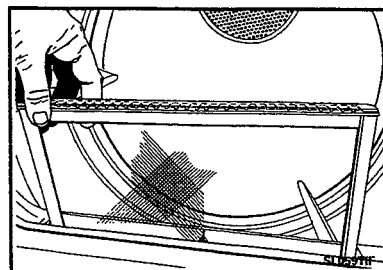


Figure 2-76

BEARING & PADS

At the bottom inside of the shroud and tumbler front assembly there are two teflon (**Rulon™**) bearings which rest on cork pads. These bearings provide a surface for the front of the tumbler to ride.

Removal & Replacement:

1. Disconnect power to the machine.
2. Remove the front panel and shroud/tumbler front assembly.
3. Drill out the old rivets and rivet new bearings in place. In positioning the bearing and cork pad, the face of the bearing should ride against the tumbler (Figure 2-77).

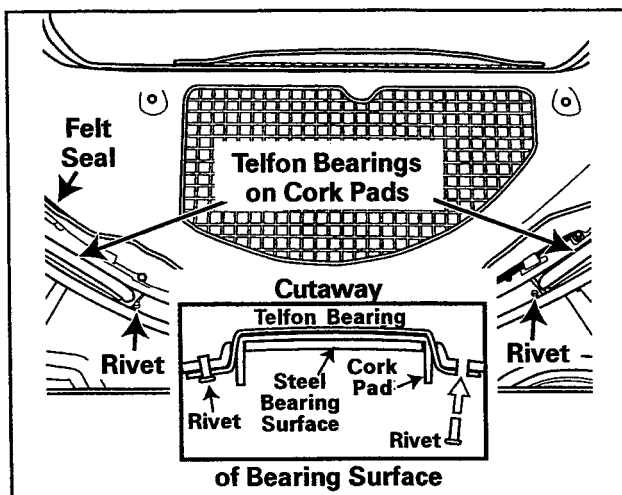


Figure 2-77

TUMBLER FRONT SEAL

The seal fits around the back circumference of the shroud/tumbler front assembly. It is a natural felt seal which is doubled over in order to spring load the seal against the tumbler. The surface which comes in contact with the revolving tumbler is coated with a layer of teflon to provide a slick, durable wear surface.

Removal

1. Disconnect power to the machine.
2. Remove the front panel and shroud/tumbler front assembly.
3. Remove the old felt seal by prying the locking tabs up with a flat blade screwdriver, (Figure 2-78).

NOTE: Pay close attention to the location of the seal overlap. This will be important as you reinstall the new seal.

Replacement

The seal will be mounted to the tumbler front in a counter clockwise rotation. Start at the 3:00 position and place under the locking tabs. The seal will overlap 1 1/4". The coated side (which is the lighter of the two colors) goes against the tumbler. The felt seal is then looped in a "U" shape so that the lighter colored side is against the tumbler front as it is slid in place under the tabs.

Bend tabs back over the felt seal with a flat blade screwdriver.

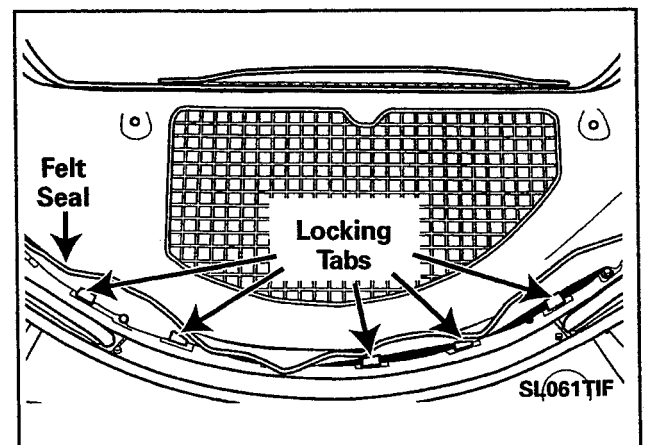


Figure 2-78

TUMBLER & BELT

The tumbler is a cylinder with no attached front or back. Tumbler speed is 50 R.P.M. Installation can be made without regard to which way it came out of a dryer (Figure 2-79).

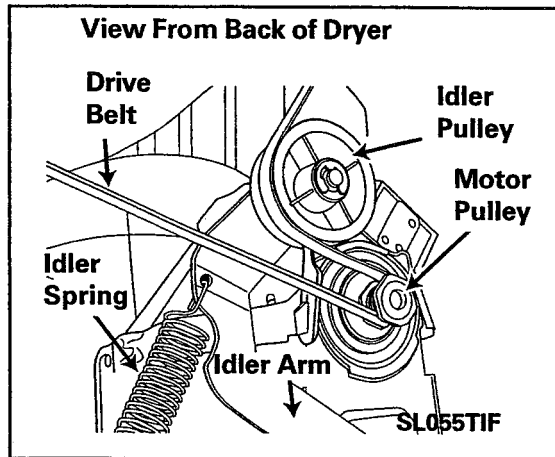


Figure 2-79

Tumbler and Drive Belt Removal

1. Disconnect power to the machine.
2. Remove front panel and door.
3. Remove shroud/tumbler front assembly.
4. Insert left hand along side of tumbler at the 8 o'clock position. Insert right arm under tumbler (as close to blower as possible).
5. Grasp the idler pulley in left hand, pull idler upward and to the left. **Note: There is a built-in stop to prevent overstressing of the idler arm spring.** Slip belt off the motor pulley (Figure 2-80).
6. Slip the belt off the back of the tumbler.
7. Pull tumbler out of cabinet while lifting top cover.

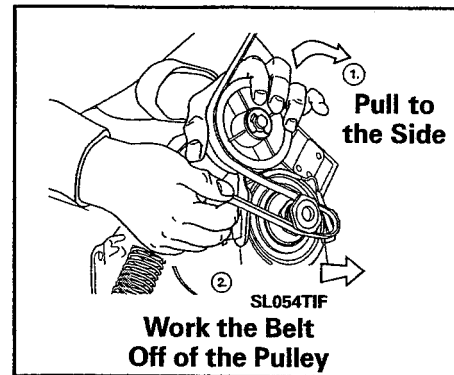


Figure 2-80

Installing Drive Belt

1. Disconnect power to the machine.
2. Place belt onto the outside of the tumbler and position the belt 1 1/2" in front of rear baffle mounting screws with ribbed side against tumbler.
3. Position tumbler into the rear felt seal, resting the tumbler onto the rear rollers. Lower the front of the tumbler onto the blower housing.
4. Insert left hand along side of tumbler at 8 o'clock. Insert right arm under tumbler (as close to blower as possible).
5. Locate the belt and create a small loop with your right hand, ensuring the belt is free of twist.
6. Position the open end of the loop (ribbed side down) onto the motor pulley with your right hand.
7. To clear the drive belt, grasp the idler pulley in left hand, pull idler upward and to the left. **NOTE: There is a built-in stop to prevent overstressing of the idler arm spring.**
8. Relax your left hand and allow the idler pulley to rest down onto the belt.

- Grasp baffles with both hands and rotate tumbler 1 or 2 turns clockwise to allow the belt to align itself.

BAFFLES

There are three tumbler clothes baffles used to aid in tumbling the clothes. Two of the baffles are 1" higher than the other. Location makes no difference (*Figure 2-81*).

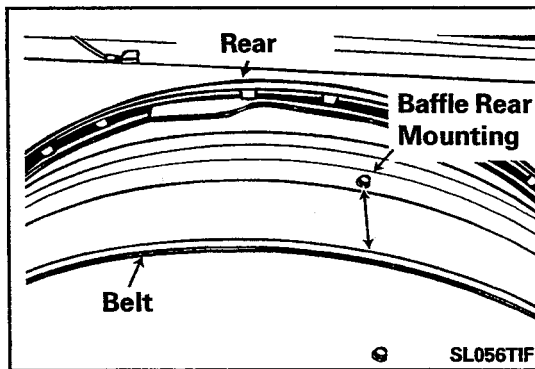


Figure 2-81

Removal

- Disconnect power to the machine.
- Remove door and front panel.
- Lift the top cover.
- Rotate the tumbler until the baffle screws of the baffle to be removed appear at the top of the tumbler.
- Remove two screws holding the baffle to the tumbler.

TUMBLER BACK ASSEMBLY

The inner wall of the tumbler back or rear bulkhead is coated with an epoxy powder coat which is a very smooth surface, resistant to scratches and abrasions.

The tumbler back assembly acts as a support for two roller assemblies which support the tumbler and weight of the load.

Removal

- Disconnect power to the machine.
- Remove front panel and door.
- Remove shroud/tumbler front assembly.
- Remove tumbler and belt.
- Remove burner and igniter on gas models. (Caution, the igniter is fragile.)
- Remove heat enclosure.
- From back of dryer, remove four screws holding tumbler back assembly and remove assembly (*Figure 2-82*).

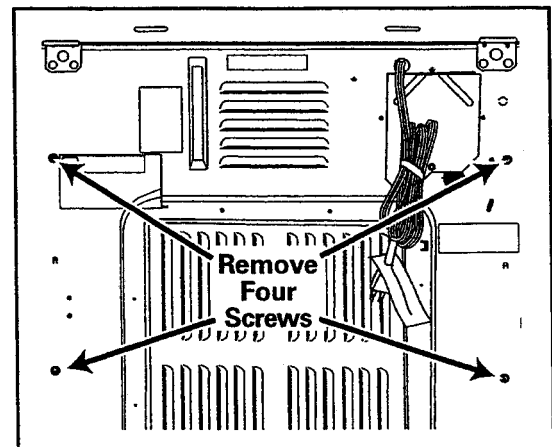


Figure 2-82

TUMBLER BACK SEAL

The felt seal fits around the front circumference of the tumbler back. It is a natural felt seal which is doubled over in order to spring load the seal against the tumbler. The surface which comes in contact with the revolving tumbler is coated with a layer of teflon to provide a slick, durable wear surface.

Removal

1. Disconnect power to the machine.
2. For ease in servicing, we recommend removal of the tumbler back assembly from the dryer. This will ensure the felt seal is secured properly.
3. Remove the old felt seal by prying the locking tabs out with a flat blade screwdriver. Pay close attention to the location of the seal overlap. This will be important as you install the new seal.

Replacement

The seal will be mounted to the tumbler back in a clockwise rotation. Start at the 11:00 position and place under the locking tabs. The seal will overlap 1 1/4". The coated side (which is the lighter of the two colors) goes against the tumbler. The seal is then looped in a "U" shape so the lighter colored side is against the tumbler back as it is slid in place under the tabs. Bend tabs back over seal with a flat bladed screwdriver (*Figure 2-83*).

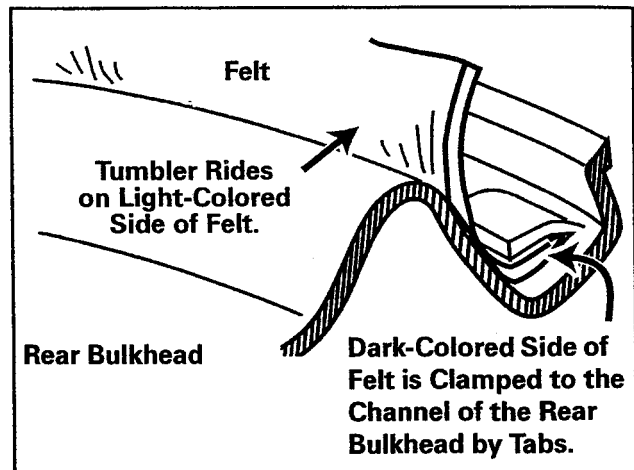


Figure 2-83

ROLLER AND BEARING ASSEMBLY

The tumbler roller consists of a rubber tire bonded to a plastic hub. There are two roller and bearing assemblies attached to the tumbler rear. If the rollers are riding up on the tumbler radius, check for bent rear roller brackets. If a bracket is bent, replace the tumbler back assembly. Rear rollers have self lubricated sintered bearings (lubricate using Maytag SBL oil, P/N 055975).

Removal

1. Disconnect power to the machine.
2. Remove front panel and door.
3. Remove shroud/tumbler front assembly.
4. Remove tumbler.
5. Remove retaining ring from groove in shaft.
6. Remove fiber washer.
7. Remove roller.
8. Remove roller shaft by removing nut on back.

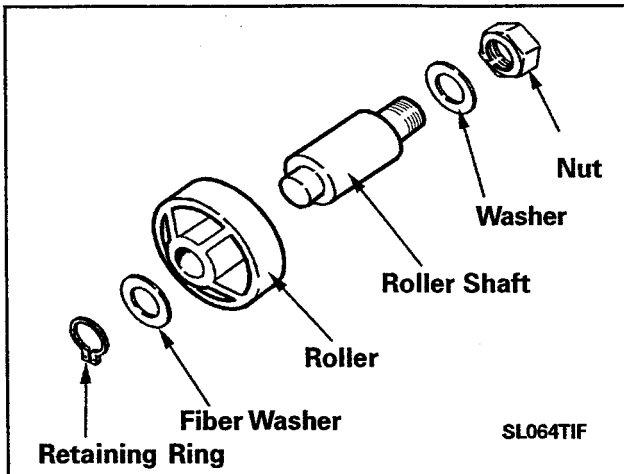


Figure 2-84

NOTE: *There is a spacer washer behind the roller. When replacing parts be certain of the order of the replacement (Figure 2-84).*

CYCLING THERMOSTATS

The cycling temperature thermostat is located on the blower housing cover. This thermostat cycles at approximately 150°F (Figure 2-85).

Removal

1. Disconnect power to the machine.
2. Remove front panel and close the door.
3. Remove the screws securing the thermostat to the cover.
4. Remove wires from thermostat.
5. Remove thermostat and replace.

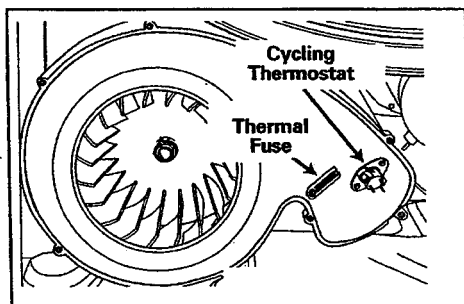


Figure 2-85

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HI-LIMIT THERMOSTAT

The hi-limit thermostat in the dryer is located on the heater enclosure. The thermostat is located close to the heating source and in the event of an overheating condition, will quickly shut off the heat. If the dryer is found to be cycling on the hi-limit, check for an air flow restriction. Gas hi-limit thermostats are rated at 220°F and the electric dryer hi-limit is rated at 200°F.

Removal

1. Disconnect power to the machine.
2. Remove front panel.
3. Remove wires from the thermostat.
4. Loosen the rear mounting screw and remove the front screw. The mounting tabs of the thermostat are open-slotted for easy replacement.
5. Slide thermostat out and replace.

THERMAL FUSES

The function of the thermal fuse is to stop the dryer in an overheating condition. The electric dryer has two thermal fuses; one fuse is mounted on the blower cover and is rated at approximately 180°F (84°C) and the other fuse is mounted on the left side of the heater enclosure and is rated at approximately 240°F (117°C). The gas dryer has one thermal fuse rated at approximately 180°F (84°C) and mounts to the blower cover. The thermal fuses for both dryer types are placed in series with the drive motor. If any of the fuses open, the drive motor will stop and the circuit through the centrifugal switch for the gas valve/heating element will also open breaking the heat circuit. The fuses will not reset and must be replaced after the overheating problem is corrected. Check for welded contacts in either the cycling or hi-limit thermostats.

Removal

1. Disconnect power to the machine.
2. Remove front panel.
3. Disconnect the wires from the fuse.
4. Remove the screw, attaching the fuse to the blower cover.
5. For the fuse mounted on the heater enclosure (electric only):
 - Remove the screw that secures the fuse bracket to the heater enclosure.
 - Remove wires and the two screws that attach the fuse to the bracket.

Checking the Thermal Fuse

1. Disconnect power to the machine.
2. Remove front panel.
3. Remove wires from the thermal fuse.
4. Check for continuity. Attach meter across the terminals of the fuse. If there is no continuity, replace fuse.

BLOWER ASSEMBLY

Seal for Blower

This rubber seal is secured to the outlet duct opening. The seal is fitted around the outer circumference lip of the outlet duct with the flange of the seal facing the blower cover. When installing the shroud/tumbler front assembly, be sure the seal is in place (*Figure 2-86*).

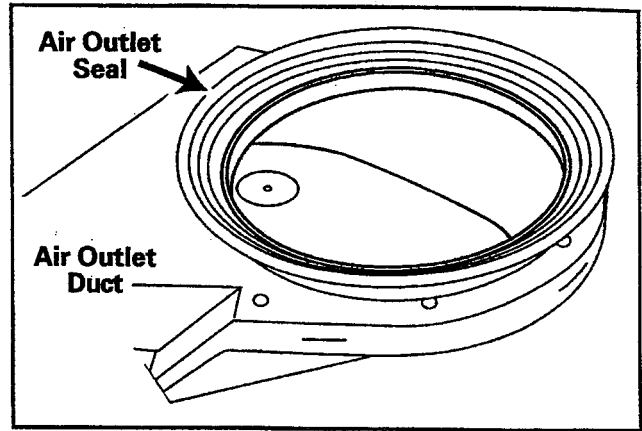


Figure 2-86

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Cover for Blower

Removal

1. Disconnect power to the machine.
2. Remove eight screws holding cover to blower housing (*Figure 2-87*).
3. Remove one screw holding cover to base.
4. It is not necessary to remove wires from thermostats to gain access to blower wheel. Lay the blower cover aside.

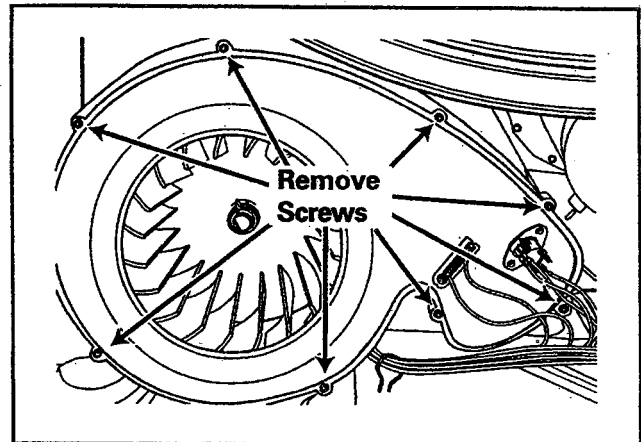


Figure 2-87

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Installing Blower Cover

1. Disconnect power to the machine.
2. Set the blower cover in place.
3. Install the first screw closest to the exhaust duct (right-most screw, *Figure 2-88*).
4. Continue to assemble, moving to the next screw in a counter-clockwise motion around the blower.
5. Install the screw for the blower cover tab to the base frame last.

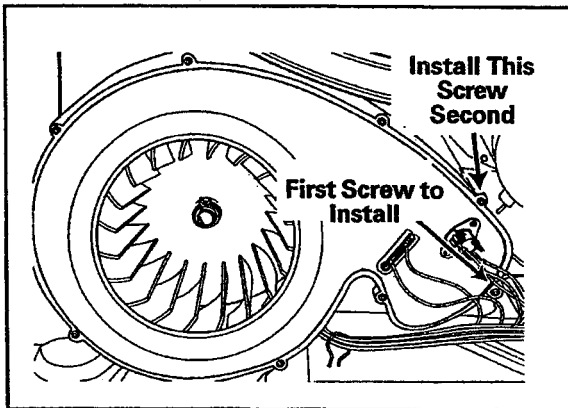


Figure 2-88

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Blower Wheel

The blower wheel is attached directly to the motor shaft behind the blower cover. When replacing a blower wheel, always replace the clamp (*Figure 2-89*).

Removal

1. Disconnect power to the machine.
2. Remove front panel and close door.
3. Remove shroud/tumbler front assembly.
4. Remove blower cover.
5. Remove clip retaining ring (*Figure 2-89*).
6. Compress and remove clamp around hub of impeller.
7. Work blower wheel back and forth while pulling off shaft. Considerable effort may be required to remove the blower wheel.

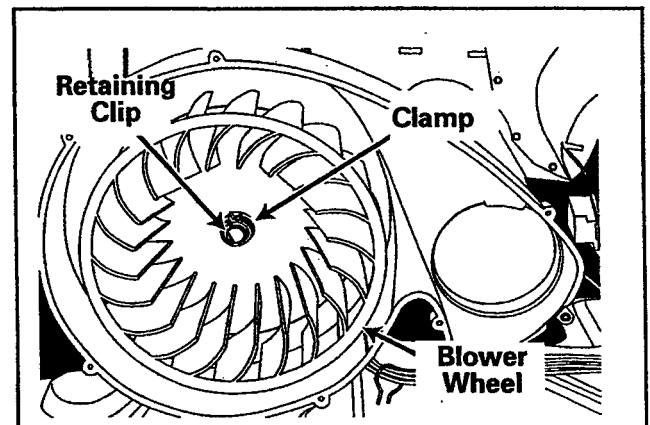


Figure 2-89

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EXHAUST DUCT PIPE

One end of the exhaust pipe is held to the back of the cabinet by one screw. The duct fits over the blower housing on the opposite end (*Figure 2-90*).

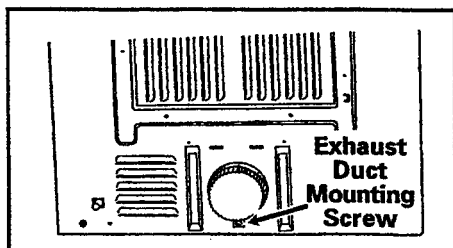


Figure 2-90

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BLOWER & MOTOR ASSEMBLY

The entire blower and drive motor assembly can be removed for servicing.

Removal

1. Disconnect power to the machine.
2. Remove front panel and door.
3. Remove shroud/tumbler front assembly.
4. Remove the belt.
5. Disengage the idler pulley spring from the base.
6. Remove tumbler.
7. Remove the screw in front of the blower assembly that secures the assembly to the base frame.
8. Remove wire harness from drive motor and thermostats on blower cover.
9. Remove two screws securing motor to base frame. An extension is required to reach the screws. Screws are behind the blower housing (*Figure 2-91*).

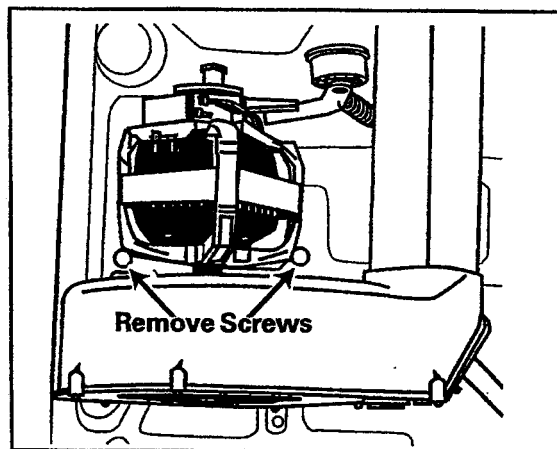


Figure 2-91

SL184TIF

10. Carefully lift the front half of the blower assembly and slide the assembly forward to disengage the motor base rear tab from the slot in the base frame.

Assembly Breakdown

1. Remove blower cover screws.
2. Remove blower wheel.
3. Remove retaining ring clip from motor shaft, positioned behind the blower impeller.
4. Remove the motor support clips which retain the motor to the motor base. Use a nut driver large enough to accept the hook-end of the clip. With a downward push of the driver onto the clip, tilt the driver handle toward the motor to unhook the clip from the support.
5. Remove motor from motor base.

MOTOR SWITCH REPLACEMENT

A switching device in the motor is used to change the path of electricity from both start and run windings to run windings only. It also completes the circuit to the heat source when the motor reaches proper speed. The external motor switch is secured to the motor with two screws.

Removal

1. Disconnect power to the machine.
2. Remove front panel and door.
3. Remove shroud/tumbler front assembly.
4. Remove belts.
5. Remove tumbler.
6. Remove wire harness from motor switch by depressing tabs on either side of the harness connector and lift the connector from the switch.
7. Remove two screws holding switch to drive motor.
8. Disengage the thermal protector switch from the motor switch body. This can be done by either inserting a small flat blade screwdriver into the slot near the switch terminals or breaking the switch body. The thermal protector switch is not replaceable and is part of the motor assembly.

IDLER ARM ASSEMBLY

The motor turns clockwise, as viewed from the front. The sleeve for the idler arm acts as a spacer so that the idler can float and aid in alignment of the belt. The idler arm spring maintains proper belt tension, keeping it in alignment with the drive pulley.

Removal

1. Disconnect power to the machine.
2. Remove front panel and door.
3. Remove shroud/tumbler front assembly.
4. Remove belt and tumbler.
5. Unhook idler spring from the base frame and remove the screw securing the assembly to the motor support bracket (*Figure 2-92*).

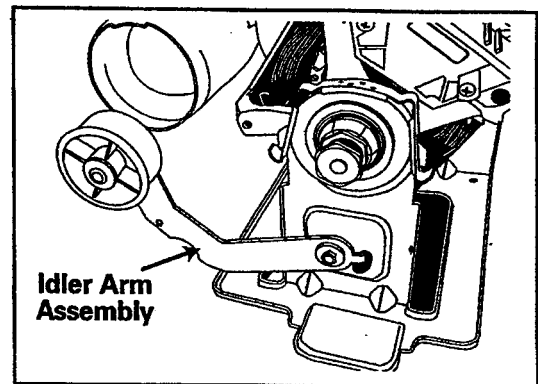


Figure 2-92

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Disassembly

1. Remove retaining clip from groove in shaft.
2. Remove fiber washer.
3. Remove idler pulley and bearing.
4. Remove second fiber washer.

NOTE: *There is a fiber washer between the pulley and the idler arm. When replacing parts, be certain the order of replacement is correct (Figure 2-93).*

IMPORTANT: *The position of the flange of the idler pulley is important. The flange should be positioned on the side opposite the idler arm.*

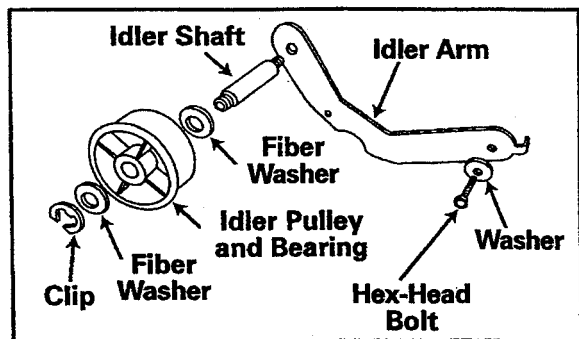


Figure 2-93

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DRIVE MOTOR

The motor features a leadless motor connection, comprised of a quick connector wire harness which connects directly to the motor. The connector has two locking tabs securing the connector to the motor switch. Press on both locking tabs to release the connector from the motor switch (*Figure 2-94*).

With the wire harness connector removed press inward on the brown actuator disc in the motor. The start and run winding can now be checked for proper ohms.

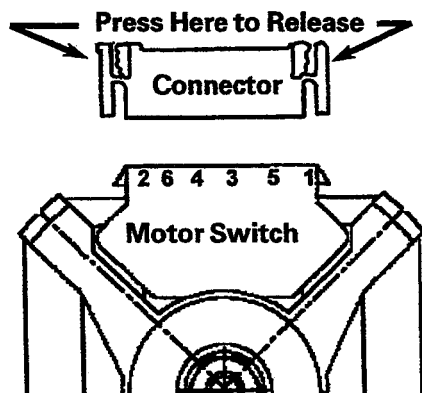


Figure 2-94

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Place the leads from an ohm meter on the proper terminals as listed in the following chart (*Figure 2-95*).

Using an ohm meter, you can also check the wiring harness for continuity from the timer to the motor.

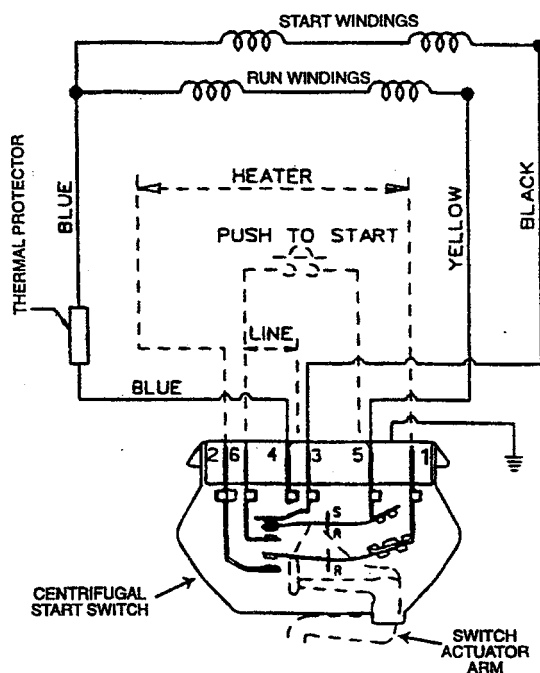


Figure 2-95

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Winding	Terminal	Terminal	Ohms
Start	3	4	3.00
Run	5	4	2.25

Motor Test Cord

A motor test cord may be used to electrically check operation of the various electrical components without removing them from the unit. Testing in this manner determines whether or not the part will function independently of other electrical components. In order to make an accurate test, proper connection of the motor test cord is important.

Drive Motor Test

The motor may be checked in the dryer or removed and checked.

Two test leads are required to check operation of the dryer drive motor. To check the motor for operation, hook up the test cord to terminals 4 and 5, (*Figure 2-95*).

Motor Switch Test

Checking heater/gas valve-motor:

1. Disconnect the wire harness from the motor.
2. Place ohm meter leads to terminals 1 and 2 (*Figure 2-95*).
3. With your thumbs, press the BROWN disc located behind the motor switch on the motor shaft (*Figure 2-96*). The BROWN disc actuates the lever of the motor switch when the motor is at rest. At optimum motor speed, the disc moves away from the switch lever. When the disc is pressed inward toward the windings, the actuator arm of the centrifugal switch will be relaxed. This allows the contacts to close, completing the heater circuit. If no continuity is found when the disc is depressed, change the centrifugal switch.

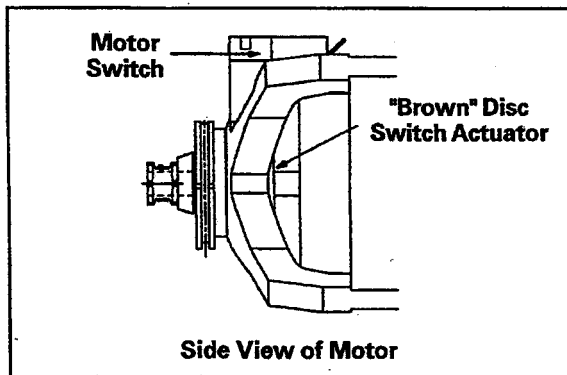


Figure 2- 96

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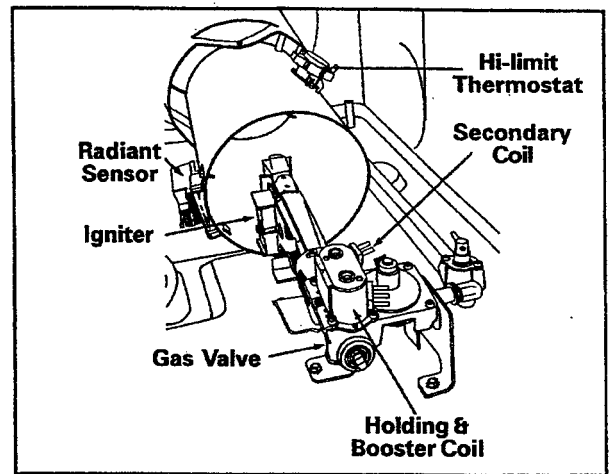


Figure 2-97

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Igniter - When the controls call for heat, line voltage is applied to the igniter. This causes the igniter to heat up and glow. It can reach a temperature of approximately 2200° F in about 30 seconds. Gas contacting the igniter at this temperature will ignite immediately.

Radiant Sensor - The radiant sensor operates much like a regular thermostat. It is mounted to the side of the combustion cone over an opening which exposes the sensor to the heat of the igniter and burner flame. In its normal condition, the contacts in the radiant sensor are closed and the circuit is completed to the igniter. The igniter glow causes the radiant sensor contacts to open, thus breaking the circuit to the igniter.

Gas Valve - The gas valve is actually two gas valves, one in series with the other (*Figure 2-98*).

GAS VALVE ASSEMBLY

The gas controls utilize a hot surface ignition system. The three major components of the gas ignition system are: Igniter, Radiant Sensor and Gas Valve (*Figure 2-97*).

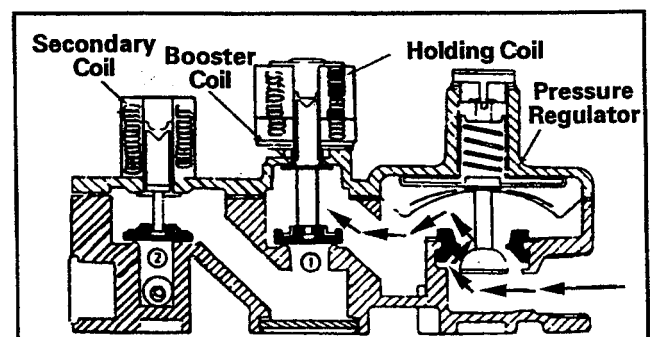


Figure 2- 98

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The first valve is opened by a solenoid which has two separate coils built into one solenoid. This solenoid uses split coils; referred to as the **Holding Coil** and the **Booster Coil**.

Both coils are needed to lift the armature and open the valve. The holding coil is strong enough to keep the valve open once the armature has been lifted.

The second of the two valves is operated by a one-coil solenoid. This is called a **Secondary Coil**.

Function of Gas Valve System

The sensor, igniter and gas valve are interrelated and function as ignition and heat source. At the start of the cycle, the radiant sensor contacts are closed, the igniter is at room temperature and the gas valve is closed, blocking the flow of gas.

NOTE: *On the wiring diagram the radiant sensor contacts are wired in parallel with the secondary coil (Figure 2-99).* This bypasses current around the secondary coil when the radiant sensor contacts are closed. Valve 2 cannot open with the radiant sensor contacts closed. The booster coil and the igniter are wired in parallel. **NOTE:** *While these two components are in parallel with each other, they are wired in series with both the radiant sensor and secondary coil combination.*

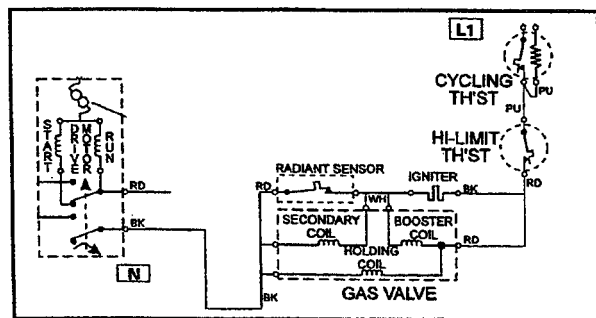


Figure 2-99

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When the radiant sensor contacts are closed, full line voltage is available to the booster coil and to the igniter.

When the radiant sensor contacts open, current has to flow through the secondary coil on Valve 2 in order to get to the booster coil and igniter. A significant voltage drop develops across the secondary coil. While the parallel booster coil and igniter are still in the circuit, they become ineffective due to their low resistance and the resulting reduced voltage available to them.

Step 1: Operation - Dryer Controls calling for heat:

The red wire in the gas valve harness is normally the "hot" side of the line. Voltage is routed to the gas valve assembly through the cycling thermostat located on the blower cover and the hi-limit thermostat on the heater cone. The black wire to the gas valve is normally the neutral side of the line and is completed through the motor centrifugal switch.

Radiant Sensor Contact Closed

The holding coil, booster coil and igniter all receive line voltage (Figure 2-100). The holding coil and booster coil open Valve 1. Valve 2 is still closed, prohibiting gas flow to the burner. The igniter, operating at line voltage, begins to get very hot. (As the igniter gets hotter, the resistance of the igniter drops.) The

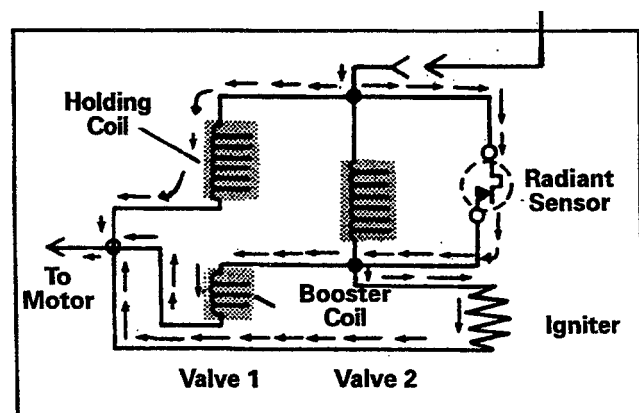


Figure 2-100

SL193TIF

igniter glow radiates heat to the radiant sensor. The secondary coil on Valve 2 is bypassed by the radiant sensor contacts.

Step 2: Radiant Sensor Contact Open:

The igniter is now hot and valve one (1) is open. The heat from the igniter causes the radiant sensor switch contacts to open.

With the radiant sensor contacts open, the secondary coil is no longer bypassed. The secondary coil is now in series with the parallel circuit combination of the booster coil and the igniter.

Because of the relatively low resistance of the hot igniter, most of the line voltage is dropped across the secondary coil. The remaining voltage is dropped across the booster coil and igniter.

The secondary coil now opens the second valve, releasing gas across the still hot igniter. The gas ignites immediately and the burner flame is established.

NOTE: *Since the igniter will cool, the tip is positioned in the burner flame which keeps it hot and resistance low.*

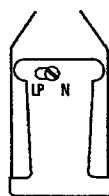
The ignition cycle is now completed and the drying cycle begins.

GAS CONVERSIONS

The gas valve is set for use with natural gas when shipped from the factory. Because of differences in operating pressure and heat content of gases, the valve must be converted to use fuels other than natural gas.

Conversion kits are available to convert from natural to L.P. and back to natural. Check parts catalog for correct part number.

AIR SHUTTER ADJUSTMENT



The air shutter has been stamped "LP" (Liquid Propane) and "N" (Natural). Loosen the screw holding the shutter, rotate the shutter until the end of the slot (labeled for the gas to be used) contacts the screw. Tighten the screw to lock the shutter in place.

GAS CHART

Gas Type	Natural	L.P.
BTU Per Cu. Ft.	1025	2500
Pressure Inches	3.5	11
Specific Gravity	0.65	1.53
Size	41	53

COIL REPLACEMENT

To replace the coils on this valve, disconnect electrical power supply. Remove the front panel and unplug the wire harness from the gas valve coils. Once the coils have been unplugged, remove the two screws that secure the coil holding bracket.

Remove the bracket and lift the coils off (*Figure 2-102*). Replace coils, bracket and wire harness.

NOTE: *When repositioning the coils onto the valve, align the coil positioning tabs and matching holes in the coil holding bracket for each coil.*

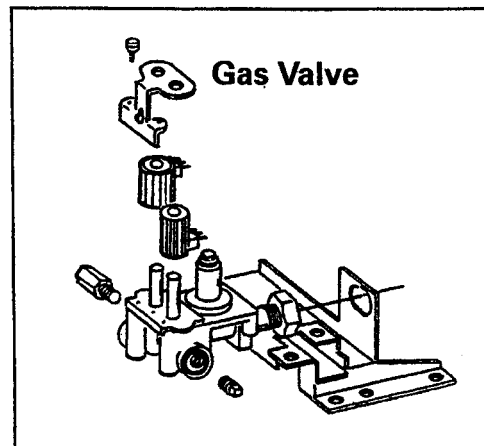


Figure 2-102

IGNITER

The igniter is used to ignite the gas as it comes from the gas valve. It is located on the left side of the burner (as viewed from the front of the dryer). The igniter is very fragile and must be handled carefully. Should you find a broken igniter, replace it. Operate dryer and see if igniter stays ON. If igniter stays ON longer than 40 seconds, replace radiant sensor (*Figure 2-103*).

1. **Disconnect power to the machine.**

2. Remove front panel and close the door.

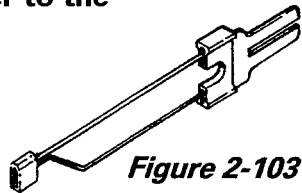


Figure 2-103

3. Unplug igniter from gas valve.
4. Remove screw holding igniter to burner.

GAS VALVE REMOVAL

1. **Disconnect power to the machine.**
2. Remove access panel.
3. Shut off gas supply and disconnect supply line to valve.
4. Disconnect wire harness at valve coils.
5. Disconnect wires from igniter.
6. Loosen brass nut attaching angle connector to gas valve.
7. Remove two screws holding valve and burner assembly to base.
8. Slide valve bracket out of slot in base and remove valve and burner assembly.
9. Remove two screws holding gas valve to bracket on underside.

ORIFICE REMOVAL

Remove the burner assembly. The orifice can be removed with a 3/8" wrench.

COMBUSTION CONE REMOVAL

1. **Disconnect power to the machine.**
2. Remove front panel and close the door.
3. Remove burner and igniter. Be careful, igniter is fragile.
4. Remove wires from high limit thermostat.
5. Remove screw in front of cone holding it to base.
6. Remove screw at back of combustion cone holding cone tab to inlet duct.
7. Pull combustion cone out of dryer.

INLET DUCT

This duct serves to channel heated air into dryer tumbler (*Figure 2-104*).

1. **Disconnect power to the machine.**
2. Remove front panel and the door.
3. Removal shroud/tumbler front assembly, tumbler and belt.
4. Remove screws securing heat cone to base and to inlet duct.
5. Remove tumbler back assembly accessible from behind the dryer.

DIRECT IGNITION SYSTEM

Testing and observation of the gas controls system can be performed with the front panel removed and the door assembly mounted and secured to the front shroud.

When the dryer is operated on a heat setting, the igniter should be energized and burner shall fire within 45 seconds at 120 VAC. Check for a flame. De-energize the gas control and reenergize. The flame should reappear within one minute

The failure of a component in this system will usually be indicated by one of three symptoms:

1. The igniter does not glow. If the igniter does not heat up, remove power and using an ohmmeter, check the following:
 - Open radiant sensor
 - Open igniter
 - Shorted booster coil
 - Open wiring
2. Igniter glows - no gas ignition. If the igniter heats but the main burner flame is not ignited, remove power and using an ohmmeter, check the following:
 - Open secondary coil
 - Open holding coil
 - Open wire harness
3. If a normal ignition takes place and after a short while the flame goes out, check for the following:
 - Radiant sensor contacts open prematurely.
 - Weak gas valve coil may lose continuity when stressed by higher temperatures.

NOTE: For proper inlet duct to tumbler back assembly alignment when reinstalling, align inlet duct to large hole in the tumbler back assembly and fasten top screw first.

HEATING ELEMENT & RELATED COMPONENTS

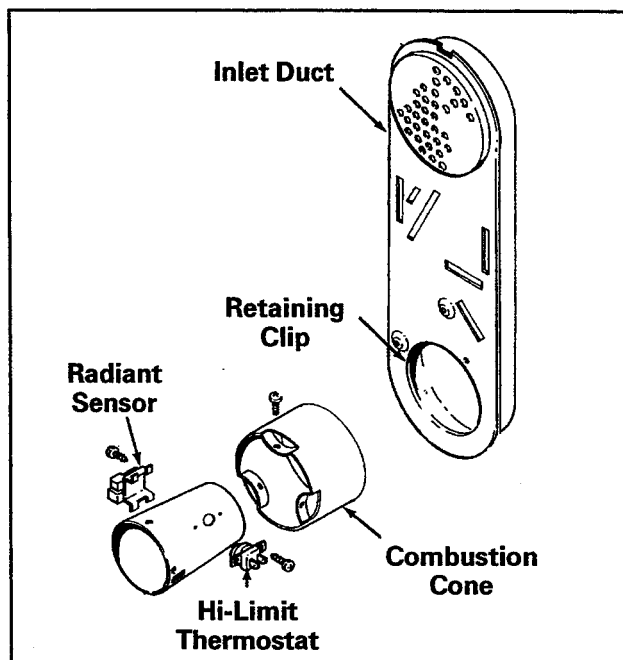


Figure 2-104

Heating Element

Electric dryers are equipped with a heating element to provide approximately 5300 watts when operated on 240 volts (*Figure 2-105*). The element is divided into six segments on each side of a support plate. This design exposes the element to more airflow and results in a lower maximum coil temperature. Terminal insulators are used on each end of the element which attaches to spade connectors. These

spade connectors are "crimped" to the wire and held in the insulator by small barbs on each side of the terminal. The barbs must be bent parallel with each terminal before element package can be removed from the enclosure. Three screws hold the element package to the enclosure.

Heater Enclosure

1. Disconnect power to the machine.
2. Remove access panel.
3. Remove screw holding heater enclosure shield to base. Remove shield from dryer.
4. Remove screw in back of enclosure holding tab to inlet duct.
5. Remove wires from the thermal fuse and heater terminal on left side of enclosure. Remove purple wire from high-limit thermostat.
6. Pull heater assembly out of dryer.

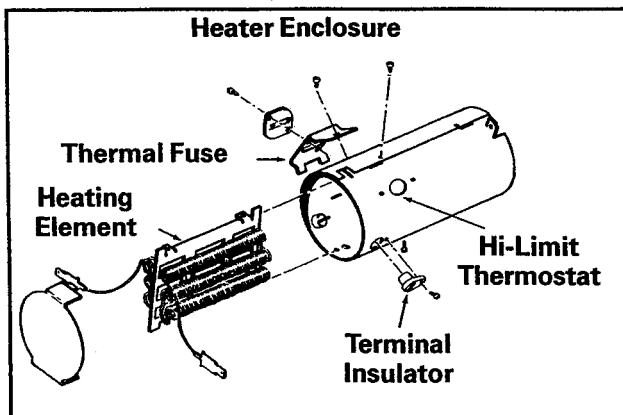


Figure 2-105

SECTION 3. PROGRAMMING

IMPORTANT

Programming instructions are shipped with each dryer.

CONTROL SET-UP PROCEDURES

The **DRYER DELICATES** keypad is used to select or deselect options that are **dryer specific**. **IMPORTANT: Read all instructions before operating!**

The fabric setting keypads and the digital display are used to set up the controls. Each unit's display can contain 4 numbers and/or letters and two decimal points. These are used to indicate the set-up codes and related code values available for use in programming the appliance.

How To Use Keypads To Program The Controls

1. The **WOOLENS** keypad will advance you through all of the set-up codes. Pressing the keypad will advance you to the next available set-up code. Holding the keypad down will automatically advance through the set-up codes at a rate of one (1) per second.
2. The **WASHER PERMANENT PRESS** keypad is used to adjust the values associated with set-up codes that pertain to **both the washer and the dryer**. The **DRYER WHITES & COLORS** keypad is used to adjust the values associated with set-up codes that are dryer specific. Pressing the keypad will increment the value. Rapid adjustment is possible to holding the keypad down.
3. The **WASHER KNITS & DELICATES** keypad is used to select or deselect options that pertain to **both the washer and the dryer**.

START OPERATING SET-UP

PD MODELS: Insert access panel key and turn.

PR MODELS: Once the debit card reader is installed (according to the reader manufacturer's instructions), the set-up mode can be entered by inserting a manual set-up card (supplied by the reader manufacturer) into the card slot. If a manual set-up card is not available, manual set-up mode can be entered by turning the access panel key.

The unit is now in the set-up mode. Before proceeding, it is worth noting that, despite all of the options available, an owner can simply choose to uncrate a new commercial machine, hook it up, plug it in and have a unit which operates.

SET-UP CODES

The set-up code is indicated by the one or two left hand characters. The set-up code value is indicated by the two or three right hand characters.

NOTE: *The programming selections apply to both the washer and the dryer unless otherwise noted.*

FOR PR MODELS: The set-up codes are the same as for the "PD" models except where noted.

CODE EXPLANATION

CODE		EXPLANATION
6XX	6	REGULAR CYCLE PRICE Represents the number of quarters (coin 1); may adjust from 0-39. (See VALUE OF COIN 1)
	06	FOR DRYER ONLY: Advance from 0-39 by pressing the DRYER WHITES & COLORS keypad. Presently set for 6 quarters = \$1.50.
	07	FOR WASHER ONLY: Advance from 0-39 by pressing the WASHER PERMANENT PRESS keypad. Presently set for 7 quarters = \$1.75.
		PR MODELS ONLY: Presently set for 0 quarters. Press WOOLENS keypad once to advance to next code.
7XX	7	REGULAR DRY TIME OR WASH LENGTH
	05	FOR DRYER ONLY: Represents the number of minutes per quarter (coin 1). Presently set for 5 minutes per coin. Example: 6 quarters times 5 minutes = 30 minutes. By pressing the DRYER WHITES & COLORS keypad, you can adjust the value from 1-99 minutes.
	14	FOR WASHER ONLY: This is the number of minutes for WASH. Unit comes from the factory pre-set with 14 minutes. Choose from 8-20 minutes by pressing the WASHER PERMANENT PRESS keypad.
		NOTE: Adjusting the wash time down to the minimum of eight minutes will make suds detection inoperable. Proper suds detection requires about 10 minutes of wash time. Press WOOLENS keypad once to advance to next code.
800	8	TYPE OF DRYER PRICING OR ADDITIONAL RINSE OPTION
	00	FOR DRYER ONLY: Fixed Cycle with Top Off. For detailed description see General User Information.
	FC	Fixed Cycle. For detailed description, see General User Information. Use the DRYER DELICATES keypad to make this selection.
		PR MODELS ONLY: Presently set for FC. FOR WASHER ONLY: Represents the number of additional rinses. Choose between 0 or 1 additional rinses by pressing the WASHER PERMANENT PRESS keypad. Press WOOLENS keypad once to advance to next code.

CODE**EXPLANATION**

900	9	<p>CYCLE COUNTER OPTION This option is either SELECTED 'ON' or NOT SELECTED 'OFF'</p>
	00 0C	<p>Not Selected 'OFF' Selected 'ON' and not able to be deselected. Press the WASHER KNITS & DELICATES keypad 3 consecutive times to select 'ON.' Once selected 'ON,' it cannot be deselected.</p> <p>Press WOOLENS keypad once to advance to next code.</p>
1.00	1.	<p>MONEY COUNTER OPTION This option is either SELECTED 'ON' or NOT SELECTED 'OFF'</p>
	00 0C	<p>Not Selected 'OFF' Selected 'ON.' Press the WASHER KNITS & DELICATES keypad 3 consecutive times to select 'ON' and 3 consecutive times to remove (Not Selected 'OFF'). Counter resets by going from 'OFF' to 'ON.'</p> <p>Press WOOLENS keypad once to advance to next code.</p>
	C0	<p>Selected 'ON' and not able to be deselected. To select 'ON' and not able to be deselected, first select 'ON,' then within two seconds, press the WASHER KNITS & DELICATES twice, WASHER PERMANENT PRESS once, and exit the set-up mode.</p>
2.00	2.	<p>SPECIAL PRICING OPTIONS This option is either SELECTED 'ON' or NOT SELECTED 'OFF'</p>
	00 SP	<p>Not Selected, 'OFF' Proceed to "A.00" code. Selected 'ON.' Press the WASHER KNITS & DELICATES keypad once for this selection.</p> <p>If SPECIAL PRICING OPTION is selected, you have access to codes 3. thru 9.</p> <p>Press WOOLENS keypad once to advance to next code.</p>

Options to use if SPECIAL PRICING is selected.

3.xx	3.	<p>SPECIAL CYCLE PRICE Represents the number of quarters (coin 1); may adjust from 0-39. (See VALUE OF COIN 1 b.05).</p>
	06	<p>FOR DRYER ONLY: Advance from 0-39 by pressing the DRYER WHITES & COLORS keypad. Presently set for 6 quarters = \$1.50.</p>
	07	<p>FOR WASHER ONLY: Advance from 0-39 by pressing the WASHER PERMANENT PRESS keypad. Presently set for 7 quarters = \$1.75</p>
		<p>PR MODELS ONLY: Presently set for 0 quarters. Press WOOLENS keypad once to advance to next code.</p>

CODE**EXPLANATION**

4.05	4.	SPECIAL DRY TIME
	05	For Dryer Only: Represents the number of minutes per quarter (coin 1). Presently set for 5 minutes per coin. Example: 6 quarters times 5 minutes = 30 minutes. By pressing the DRYER WHITES & COLORS keypad, you can adjust the value from 1-99 minutes. Press WOOLENS keypad once to advance to next code.
5.00	5.	TIME-OF-DAY CLOCK, MINUTES
	00	This is the TIME-OF-DAY CLOCK, minute setting; select 0-59 minutes by pressing the WASHER PERMANENT PRESS keypad. Press WOOLENS keypad to advance to next code.
6.00	6.	TIME-OF-DAY CLOCK, HOURS (NOTE: Uses military time or 24 hr. clock).
	00	This is the TIME-OF-DAY CLOCK, hour setting; select 0-23 hours by pressing the WASHER PERMANENT PRESS keypad. Press WOOLENS keypad once to advance to next code.
7.00	7.	SPECIAL PRICE START HOUR (NOTE: Uses military time or 24 hr. clock).
	00	This is the TIME-OF-DAY CLOCK, hour setting; select 0-23 hours by pressing the WASHER PERMANENT PRESS keypad. Press WOOLENS keypad once to advance to next code.
8.00	8.	SPECIAL PRICE STOP HOUR (NOTE: Uses military time or 24 hr. clock).
	00	This represents the stop hour; 0-23 hours. Select STOP HOUR by pressing the WASHER PERMANENT PRESS keypad. Press WOOLENS keypad once to advance to next code.
9.10	9.	SPECIAL PRICE DAY
	10	This represents the day of the week and whether special pricing is selected for that day. A number followed by '0' indicates no selection that particular day (9.10). A number followed by an 'S' indicates selected for that day (9.1S). Days of the week (1-7) are selected by pressing the WASHER PERMANENT PRESS keypad. When exiting set-up code '9,' it must show current day of week.

Special Price Day cont'd....

	Days of the week	SPECIAL PRICE DAY If selected, would show
10	Day 1	Sunday 1S
20	Day 2	Monday 2S
30	Day 3	Tuesday 3S
40	Day 4	Wednesday 4S
50	Day 5	Thursday 5S
60	Day 6	Friday 6S
70	Day 7	Saturday 7S

Press WOOLENS keypad once to advance to next code.

CODE

EXPLANATION

- A.00** **A.** **VAULT VIEWING OPTION**
 This option is either SELECTED 'ON' or NOT SELECTED 'OFF'.
- 00 Not selected 'OFF.'
 SC Selected 'ON.'
 Press the WASHER KNITS & DELICATES keypad once for this selection.
 When selected, the money and/or cycle counts will be viewable (if counting is selected), when the coin box is removed.
- Press WOOLENS keypad once to advance to next code.
- b.05** **b.** **VALUE OF COIN 1**
- 05 This represents the value of coin 1 in number of nickels. 05 = \$0.25. By pressing the WASHER PERMANENT PRESS keypad you have the option of 1-199 nickels.
- Press WOOLENS keypad once to advance to next code.
- PR MODELS ONLY:** For PR models using Enhanced Debit mode, this field represents the value of top off in nickels. Presently set for \$0.25. By pressing the WASHER PERMANENT PRESS keypad, you have the option of 1-199 nickels.
- Press WOOLENS keypad once to advance to next code.
- E.00** **E.** **ADD COINS OPTION**
 This option is either SELECTED 'ON' or NOT SELECTED 'OFF' This option causes the customer display to show the number of coins (coin 1) to enter, rather than the dollars-and-cents amount.
- 00 Not selected 'OFF.'
 AC Selected 'ON.' Press the WASHER KNITS & DELICATES keypad 3 consecutive times for this selection.
- PR MODELS ONLY:** In Enhanced Debit mode, this option is not selectable.
- Press WOOLENS keypad once to advance to next code.

CODE	EXPLANATION
F.00	F. ENHANCED PRICING OPTION - FOR WASHER ONLY:
00	Not selected 'OFF'
CP	Cycle -Based pricing enabled. This option allows configuration of different prices for cold, warm, and hot water cycles.
SU	Super Cycle pricing enabled. This option allows customers to upgrade cycles by depositing extra money. Setup codes 'H.' and 'h.' will only display when this option is enabled. Press the WASHER KNITS & DELICATES keypad for this selection.
	Press WOOLENS keypad once to advance to next code.
H.01	H. SUPER CYCLE UPGRADE PRICE - FOR WASHER ONLY: (Skipped unless super cycle pricing is enabled).
01	This represents the number of coin 1 required to upgrade a base cycle to a super cycle. Advance from 0-39 by pressing the WASHER PERMANENT PRESS keypad.
	Press WOOLENS keypad once to advance to next code.
h.01	h. SUPER CYCLE TYPE - FOR WASHER ONLY: (Skipped unless super cycle pricing is enabled)
01	This represents the super cycle upgrade option. Press the WASHER PERMANENT PRESS keypad to step through upgrade options 1-3 as follows: 01 - enhanced wash, extra 3 minutes of wash tumble in addition to the programmed wash time. 02 - extra rinse for all cycles, final warm rinse for WHITES, COLORS, and KNITS & DELICATES. 03 - both 01 and 02.
	Press WOOLENS keypad once to advance to next code.
J.Cd	J. COIN/DEBIT OPTION
Cd	Both coin & debit selected.
C_	Coins selected, debit disabled.
_d	Debit Card selected, coins disabled. Press the WASHER KNITS & DELICATES keypad 3 consecutive times for this selection.
Ed	Enhanced Debit mode is self-selected when a Generation 2 card reader is installed in the washer. The Ed option cannot be manually selected or deselected.
	Press WOOLENS keypad once to advance to next code.
L.00	L. PRICE SUPPRESSION OPTION
	This option causes the customer display to show 'AVAILABLE' rather than the amount of money to add. (Used mainly in debit installations.)
00	Not selected 'OFF'

CODE	EXPLANATION
L.00 cont'd....	
PS	<p>Selected 'ON.' Press the WASHER KNITS & DELICATES keypad once for this selection.</p> <p>Press WOOLENS keypad once to advance to next code.</p>
n.CE	<p>n. CLEAR ESCROW OPTION When selected, money held in escrow for 30 minutes without further escrow or cycle activity will be cleared.</p> <p>00 Not selected 'OFF:' CE Selected 'ON.' Press the WASHER KNITS & DELICATES keypad once for this selection.</p> <p>Press WOOLENS keypad once to advance to next code.</p>
o.Sd	<p>o. SUDS DETECT OPTION - FOR WASHER ONLY: When selected, this option allows automatic customization of the wash cycle to optimally handle sever cases of sudsing.</p> <p>00 Not selected 'OFF:' Sd Selected 'ON.' Press the WASHER KNITS & DELICATES keypad once for this selection.</p> <p>Press WOOLENS keypad once to advance to next code.</p>
p.E	<p>p. MAX EXTRACT OPTION - FOR WASHER ONLY:</p> <p>00 Not selected 'OFF:' Emphasis on wrinkle avoidance through 'FLUFF' final spins. E Selected 'ON.' Emphasis on maximum water extraction through 'MAX EXTRACT' final spins. Press the WASHER KNITS & DELICATES keypad once for this selection.</p> <p>Press WOOLENS keypad once to advance to next code.</p>
r.800	<p>r. TOP SPIN SPEED RPM - FOR WASHER ONLY:</p> <p>800 This can be altered between the following spin speeds: 600 rpm, 650 rpm, 700 rpm and 800 rpm. Step between speeds by pressing the WASHER PERMANENT PRESS keypad. Presently set for 800 rpm.</p> <p>Press WOOLENS keypad once to advance to next code.</p>
U.00	<p>U. PENNY INCREMENT OFFSET</p> <p>00 This represents the penny increment price offset used in Enhanced (Generation 2) Debit PR models.</p> <p>FOR DRYER ONLY: Choose from 0-4 pennies by pressing the DRYER WHITES & COLORS keypad.</p>

CODE EXPLANATION

U.00 cont'd...

FOR WASHER ONLY:

Choose from 0-4 pennies by pressing the WASHER PERMANENT PRESS keypad.

Press WOOLENS keypad once to advance to next code.

A1.00

A1.

PREWASH LENGTH - FOR WASHER ONLY:

00

This is the number of minutes of PREWASH. The PREWASH is followed by a one minute tumble drain. Choose from 0-10 minutes by pressing the WASHER PERMANENT PRESS keypad.

Press WOOLENS keypad once to advance to next code.

A2.04

A2.

FINAL SPIN LENGTH - FOR WASHER ONLY:

04

This is the number of minutes of final high speed spin when the max extract option is selected. Choose from 3-10 minutes by pressing the WASHER PERMANENT PRESS keypad.

Press WOOLENS keypad once to advance to next code.

If cycle (90C) is selected, the following is true:

100	Represents the number of cycles in HUNDREDS	1	<u>02</u>	=	200
200	Represents the number of cycles in ONES	2	<u>25</u>	=	25
		TOTAL		=	225 CYCLES

This is "VIEW ONLY" and cannot be cleared.

Press WOOLENS keypad once to advance to next code.

If money counter (1.0C or 1.C0) is selected, the following is true:

300	Number of dollars in HUNDREDS	3	<u>01</u>	=	100
400	Number of dollars in ONES	4	<u>68</u>	=	68
500	Number of CENTS	5	<u>75</u>	=	75
		TOTAL		=	\$168.75

END of SET-UP PROCEDURES.

EXIT FROM SET-UP MODE

Turn access panel key back to original position.

GENERAL USER INFORMATION

BLANK DISPLAY - This condition indicates the appliance is inoperative. Enter set-up mode to view diagnostic code.

"0 MINUTES" SHOWING IN DISPLAY - This condition indicates the appliance cannot be operated. Coins dropped or debit inputs during this condition will be stored in escrow but cannot be used until normal operation is restored by opening and closing the door. If a door switch fails, it must be replaced before normal operation can be restored.

COLD START (initial first use) - Appliance is programmed at the factory as follows:

Dryer	5	minute dry time/quarter (coin 1)
	\$1.50	dry price (fixed cycle with top off - PD models)
	\$0.00	dry price (fixed cycle - PR models)
Washer	14	minute wash period
	3	rinses (extra rinse not enabled)
	\$1.75	wash price (PD models)
	\$0.00	wash price (PR models)

WARM START (after power failure) - A few seconds after power is restored, if a cycle was in progress at the time of the power failure, "RESELECT CYCLE" will flash in the display, indicating the need for a key press to restart the washer or dryer. While the washer cycle can immediately be restarted, the washer motor will not run until power has been present for two minutes.

WASHER DOOR LOCK - Locking of the door will be initiated once the wash level has been satisfied in the initial fill. The door will remain locked until near the end of a cycle or until approximately 2 minutes after a power interruption or cycle cancellation via service mode.

DEBIT CARD READY - This appliance is debit card "cable" ready. It will accept a variety of debit card systems; but does NOT come with a debit card reader. Refer to the debit card reader manufacturer for proper machine set-up. In models converted to a Generation 1 debit card system, debit pulses represent the equivalent of one coin.

DISPLAY - After the unit has been installed and plugged in, the display will show "0 MINUTES." Once the unit has been plugged in and the door opened and closed, the display will show the price. In units set for free cycles, the display will flash "SELECT CYCLE."

PRICING - After the door is opened following the completion of a cycle, the display indicates the cycle price (unless set for free operation). As coins are dropped or debit inputs arrive, the display will change to lead the user through the initiation of a cycle.

FREE CYCLES - This is established by setting the cycle price to zero. When this happens "SELECT CYCLE" will appear rather than a cycle price. Any dryer cycle started as a free cycle will automatically terminate when the door is opened.

DRYER FIXED "VEND" PRICING - A dryer set up for "Fixed Cycle" operation can only accept additional time accumulated by increments equal to the length of a complete dry cycle. A maximum of 99 minutes may be purchased; no additional credit is given when 99 minutes is in the display.

DRYER FIXED CYCLE WITH TOP OFF PRICING - A dryer set to offer "Top Off" capability will allow time to be added to an existing dry cycle in increments equal to the number of minutes of dry time per quarter (coin 1), up to 99 minutes, regardless of the cost required to start the machine. No credit is given for coins or debit inputs entered when the control is displaying 99 minutes.

PR Models: In Enhanced Debit mode, the top off price can be set independently. (See VALUE OF COIN 2), and the top off time is calculated according to the following equation:

$$\frac{\text{top off price}}{\text{full cycle price}} = \frac{\text{top off time}}{\text{full cycle length}}$$

Penny increment offset is not applied to top-off purchases.

DRYER ACCUMULATOR PRICING - If the price is set to one coin 1, and Dryer Fixed Cycle with Top Off option is selected, then accumulator mode is in effect. Cycle time can be purchased one coin at a time (PD models) up to the maximum time of 99 minutes. All money will be credited to a cycle with a single button press while in dryer accumulator pricing.

DIAGNOSTIC MODE

This mode is entered by depressing the WASHER KNITS & DELICATES for 1 second while in any of the set-up codes one through six, anytime a diagnostic code is present, or while dAS displays if operating with Maytag Data Acquisition setup.

On entry to diagnostic mode, the entire display will flash, a cycle in process is cancelled, money in escrow is cleared, and diagnostic codes are cleared. If a diagnostic code persists, it must be corrected before the following cycle options are permitted.

Procedures to initiate cycle activity from diagnostic mode are as follows:

- 1. Washer Field Diagnostic Cycle** - With the entire display flashing, this cycle is started by pressing the WOOLENS keypad. This cycle provides a quick verification that the cold and hot water valves, dispenser valves, pump, motor and door lock are working.
- 2. Washer Cycle Credit** - With the entire display flashing, a cycle may be credited by pressing the WASHER PERMANENT PRESS keypad (CC will display). When the service mode is exited, "SELECT CYCLE" will be displayed unless the end-of-cycle door opening is required.
- 3. Washer Operational Diagnostic Cycle** - With the entire display flashing, this cycle is started by pressing the WASHER WHITES keypad. This cycle provides more typical full length fills, tumbles, and drains allowing for a more thorough analysis of machine operation including pressure switch behavior.
- 4. Dryer Field Diagnostic Cycle** - With the entire display flashing, this cycle is started by pressing the DRYER PERMANENT PRESS keypad. The cycle consists of seven minutes of heat and one minute of cool-down. The DRYER WHITES & COLORS keypad will increment the diagnostic cycle minutes up to 99, then roll over to 2 minutes. Pressing the WASHER KNITS & DELICATES keypad will cancel this cycle and exit the diagnostic mode.

DIAGNOSTIC CODES

If the setup mode is entered and one of the following has occurred, the appropriate diagnostic code will be in the display.

- d1 Dryer door sense error on control board or due to power line interference (dryer cycles and dryer display disabled until diagnostic code is manually cleared).
- d2 Washer door sense error on control board or due to power line interference (washer cycles and washer display disabled until diagnostic code is manually cleared).
- d4 Dryer motor control circuit error (dryer cycles and dryer display disabled until diagnostic code is manually cleared).
- d5 Blocked coin 1 or coin drop control circuit failure (coin recognition and entire display disabled while blockage persists).
- d7 Slow fill detected during previous cycle (washer cycle paused but can be restarted).
- d8 Last drain was slow.
- d9 Voltage detected below 90 vac for 8 seconds.
- d10 Washer door lock sense error due to power line interference (washer spins inhibited until corrected).
- d11 Washer motor speed error detected (washer cycle paused but can be restarted).
- d12 Dryer motor sense error on control board or due to power line interference (dryer cycles and dryer display disabled until diagnostic code is manually cleared).
- d13 Blocked coin 2 or coin drop control circuit failure (coin recognition and entire display disabled while blockage persists).
- d16 Not receiving communications from installed debit card reader in Enhanced (Generation 2) Debit mode.

HELP MODE

This mode is entered by pressing the WASHER PERMANENT PRESS keypad while in special pricing option mode 2.XX (or while dAS displays if operating with Maytag Data Acquisition setup). In help mode, WOOLENS can be used to advance through three help codes (displayed as 1h.XX, 2h.XX, and 3h.XX, see "HELP CODES"), the extended fill option (displays hF.00 when not selected, hF.EF when selected, the software revision, the spinner rpm (displays SPIN XXX), the relative amount of power being requested of the motor (displays P XXX), the relative amount of unbalance in the system (displays U XXX), and the number of seconds before the line relay is allowed to turn on again (displays L XXX). Pressing WASHER DELICATES & KNITS while any of the help codes are displayed clears the three help codes. Pressing WASHER DELICATES & KNITS while the extended fill option is displayed selects or deselects that option. When selected, the time allowed for filling to the washer level prior to the cycle being paused is doubled. Press the WASHER PERMANENT PRESS key at any time to exit the help mode.

HELP MODE cont'd

In help mode, the other display symbols and elements are mapped to reflect the state of various inputs and outputs as follows:

DRYER ONLY - UPPER HALF OF DISPLAY

▲ ----- dryer motor sensed running
○ beside digit ----- dryer door closed
■ ----- 140 degree thermostat closed
OR ----- heater relay on
& ----- dryer motor relay on

WASHER ONLY - LOWER HALF OF DISPLAY

WASH ----- water sensed at wash level
* ----- low voltage present (below about 90 VAC)
RE ----- redistributing due to out-of-balance
○ beside digit ----- washer door closed
LOCKED ----- door lock sensed
SUDS ----- door lock relay on
COLD ----- cold water relay on
HOT ----- hot water relay on
RECOVERY ----- drain relay on
COOL ----- softener relay on
DOWN ----- bleach relay on

HELP CODES

- (8) Motor sensed not turning during wash cycle. Perform motor diagnostic testing.
- (F) Suds lock possible or machine overload with clothing, spinning at less than 500 RPM during final spin (clothes will be wet).
- (10) Motor sensed not turning during spin cycle. Washer will retry the spin cycle. Perform motor diagnostic testing.
- (17) Door was not locked at the end of the final spin. Check door lock and wiring.
- (19) Water level was reached during the wash cycle, but water level was not maintained during cycle. "Slow fill" or water draining out of tub, "d7" in diagnostic codes.
- (1b) slow fill, water level never reached. Resulting in water valve being turned off during pause in cycle. "d7" in diagnostic codes.
- (1d) Unbalance within a spin at greater than 500 RPM and less than 675 RPM, during the final spin cycle. Check unbalance switches and suspension. Check for unbalanced load of clothing.
- (2A) Motor on a full power for 15 seconds during the final spin at 500 RPM and less than 675 RPM, probably due to a large load of clothing. Machine will spin at a slower speed than programmed. Possibly due to loss of phase winding in motor. Perform motor diagnostic testing.
- (2F) Shut down due to motor speed error during spin. "d11" in diagnostic codes. Perform motor diagnostic testing.
- (30) Shut down due to motor speed error during wash cycle. "d11" in diagnostic codes. Perform motor diagnostic testing.

- (31) Spin cycle was delayed due to wash level being sensed for more than 60 seconds at the start of the spin. "d8" in diagnostic codes. Check drain pump and drain hose. Perform motor diagnostic testing.
- (32) Unbalance at less than 500 RPM during the final spin. Spin cycle was stopped. Washer will have wet clothes. Check unbalance switches and suspension. Check for unbalanced load of clothing.
- (33) Suds detected during wash cycle.
- (34) Spinning below 85 RPM too long during the spin cycle. "d11" in diagnostic codes. Perform motor diagnostic testing.
- (35) Tumbling above 50 RPM too long during the wash cycle. "d11" in diagnostic codes. Perform motor diagnostic testing.
- (36) Motor not slowing down after 120 seconds of coasting down after reaching 300 RPM. "d11" in diagnostic cycle. Perform motor diagnostic testing.
- (37) Motor running too fast during tumble cycle. Could be due to the belt slipping or belt not on basket pulley. "d11" in diagnostic cycle. Perform motor diagnostic testing.
- (39) Motor still running after 120 seconds of coasting down after an unbalance. "d11" in diagnostic cycle. Perform motor diagnostic testing.
- (40) Motor running faster than 85 RPM and the door is not locked. Check wiring or intermittent door lock. Perform motor diagnostic testing. Possibly due to switching noise (normal operation).
- (71) Debit card reader messaging problem. Consult debit card reader's manufacturing trouble shooting information.
- (74) Debit card reader messaging problem. Consult debit card reader's manufacturing trouble shooting information.
- (75) Debit card reader messaging problem. Consult debit card reader's manufacturing trouble shooting information.

TO OPERATE DRYER

1. Insert coins until "SELECT CYCLE" flashes in display.

PR Models: A debit card is required rather than coins. In Enhanced Debit mode, the card balance will also display when a debit card is inserted into the reader.

2. Door must be closed **before** cycle selection is made.
3. Press fabric setting keypad for the dryer cycle desired. After the cycle is started, drying time will display and count down regardless if the dryer door is open or closed.

Except where not supported by the card reader (Gen 1 debit) additional time can

be purchased (in full or partial cycle increments), according to the TYPE OF DRYER PRICING (800 or 8FC option chosen) at any time, up to 99 minutes. "COOL DOWN" will appear in display near end of cycle.

WHITES & COLORS	1 Minute Cool Down
PERMANENT PRESS	3 Minute Cool Down
DELICATES	3 Minute Cool Down

4. When a cycle is interrupted by opening the door, the selected cycle will remain in display. Also, "RESELECT CYCLE" will flash in display. To restart the washer, close door and press desired fabric setting keypad.

TO OPERATE WASHER

1. Insert coins until "SELECT CYCLE" flashes in display.

PR Models: A debit card is required rather than coins. In Enhanced Debit mode, the card balance will also display when a debit card is inserted into the reader.

2. Door must be closed **before** cycle selection is made.
3. Press fabric setting keypad for the wash cycle desired. After the cycle is started, the time will display and count down.
4. When a cycle is interrupted by opening the door, the selected cycle will remain in display. Also, "RESELECT CYCLE" will flash in display. To restart the washer, close door and press desired fabric setting keypad.

SECTION 4. TROUBLESHOOTING

GENERAL INFORMATION

The malfunction of an electrical circuit cannot easily be diagnosed unless you first understand how it functions when operating normally.

COMPONENTS

There are two basic categories for electrical components, switches and loads.

A switch controls the current path to a load component. Door switches, water level switches and relays are examples of switching components.

An electrical load uses electricity to perform some function. Motors convert electricity to magnetic fields and then to mechanical motion. Solenoids use magnetic fields to push or pull. Lamps convert electricity to light.

The schematic wiring diagram is followed much like a road map. The lines represent the wiring connections between components. Connections in the wiring are indicated by a small dot. If the lines cross, but no dot is present at the intersection, there is no connection. As much as possible, switches are shown in their normal or most common configuration.

Use CAUTION when working with live circuits.

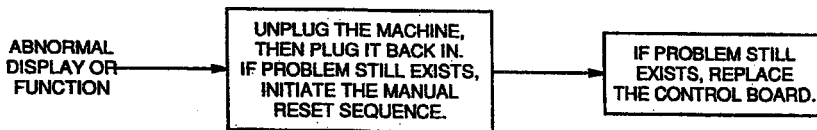
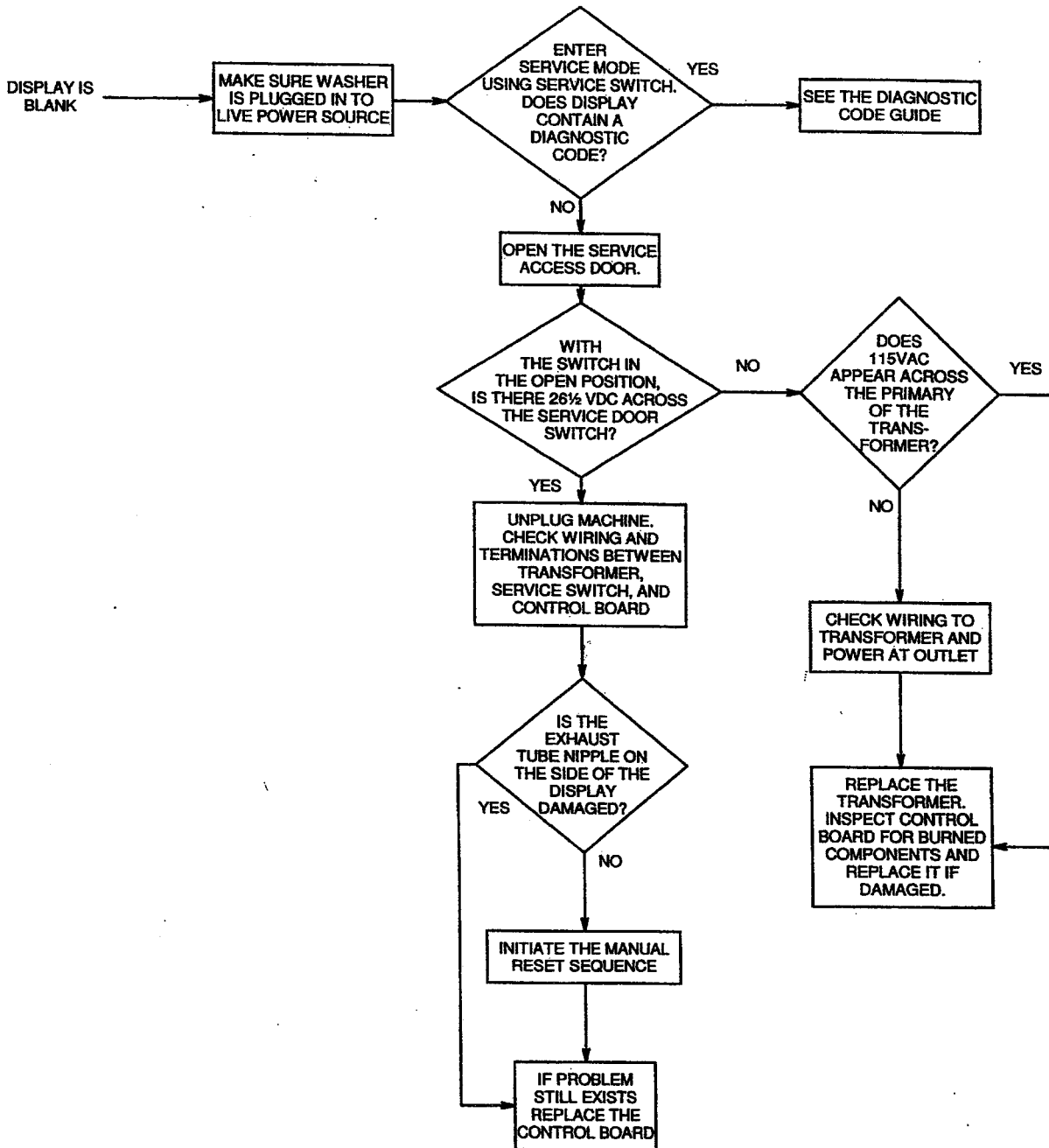
EXTREME CAUTION should be taken when performing voltage checks due to danger of possible electrical shock.

Resistance or continuity testing is done with the product disconnected from power. Failure to do so can result in damage to your meter.

CAUTION

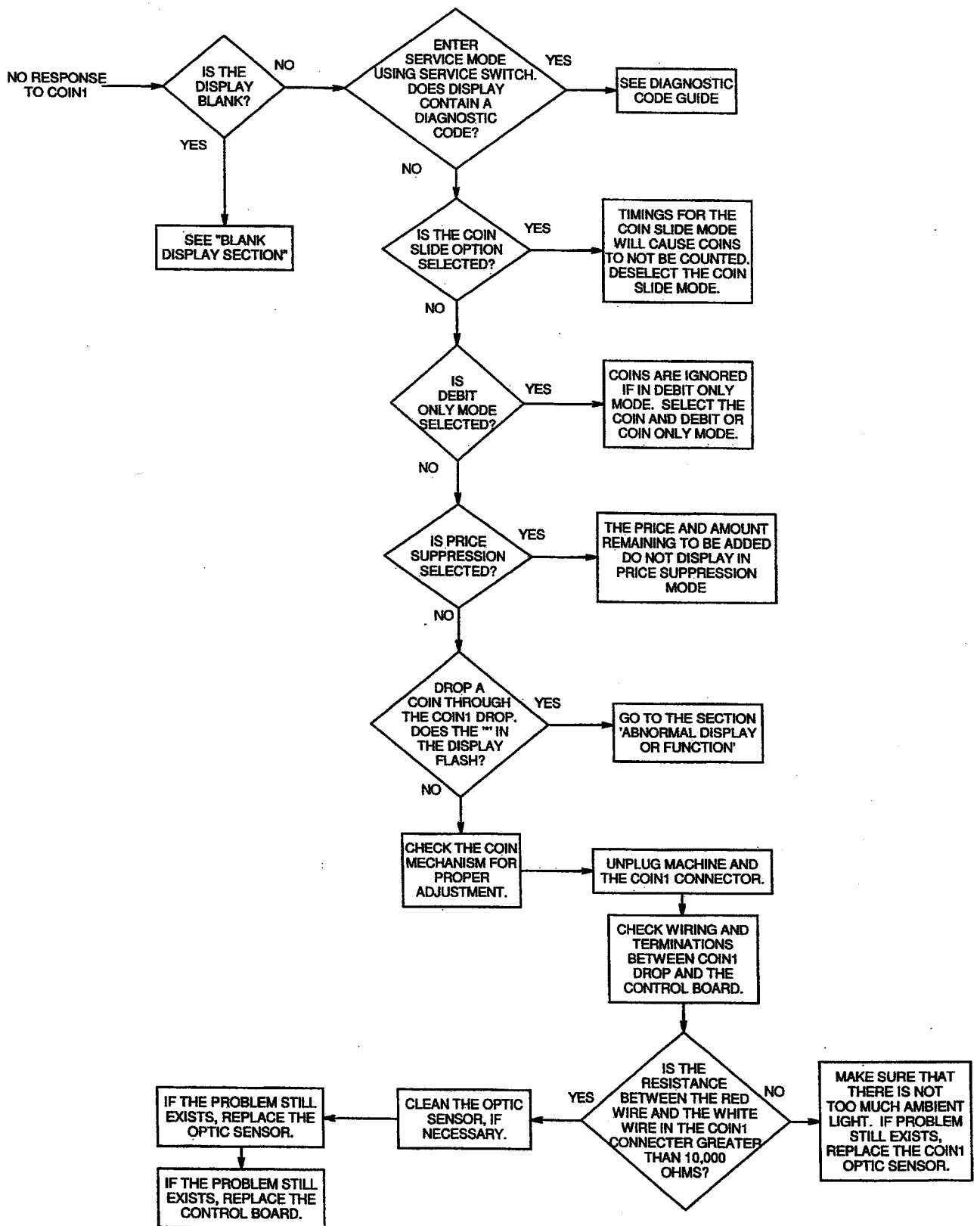
Except as necessary to perform a particular step in servicing a product, the electrical power supply should ALWAYS be disconnected when servicing a product.

WASHER/DRYER TROUBLESHOOTING GUIDE



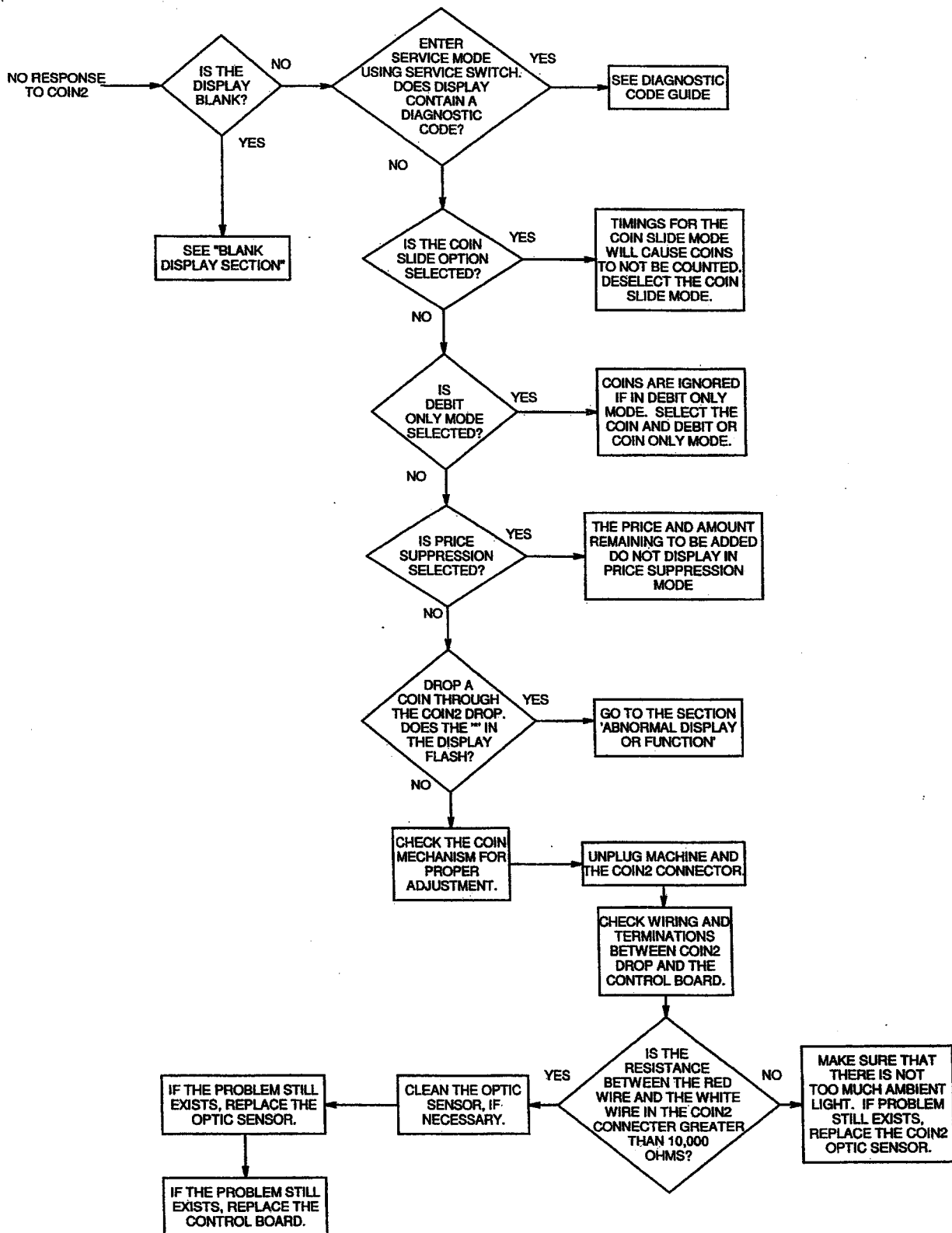
CAUTION

Except as necessary to perform a particular step in servicing a product, the electrical power supply should ALWAYS be disconnected when servicing a product.



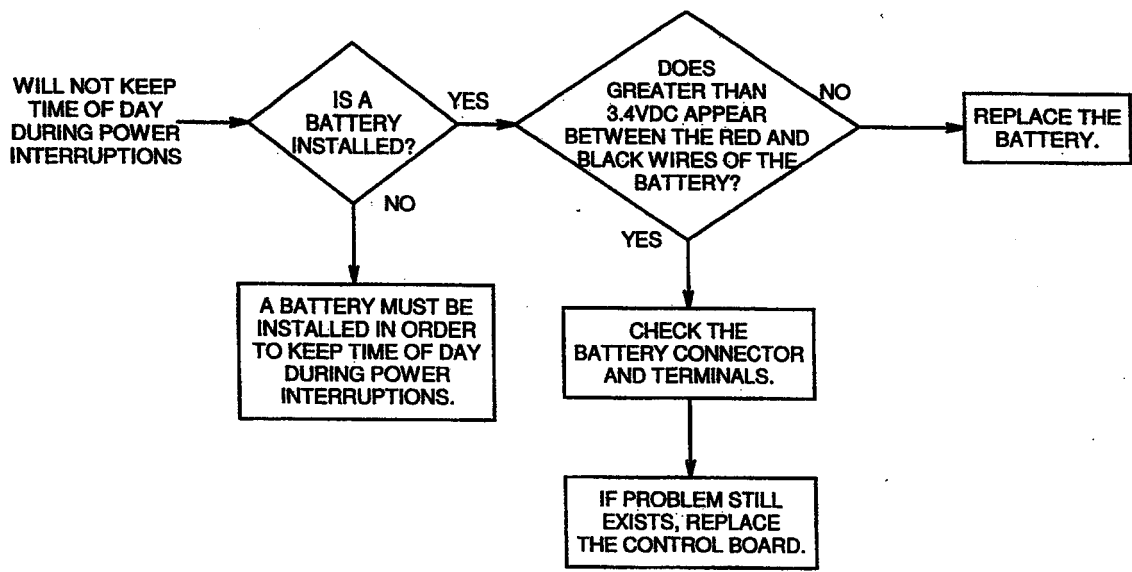
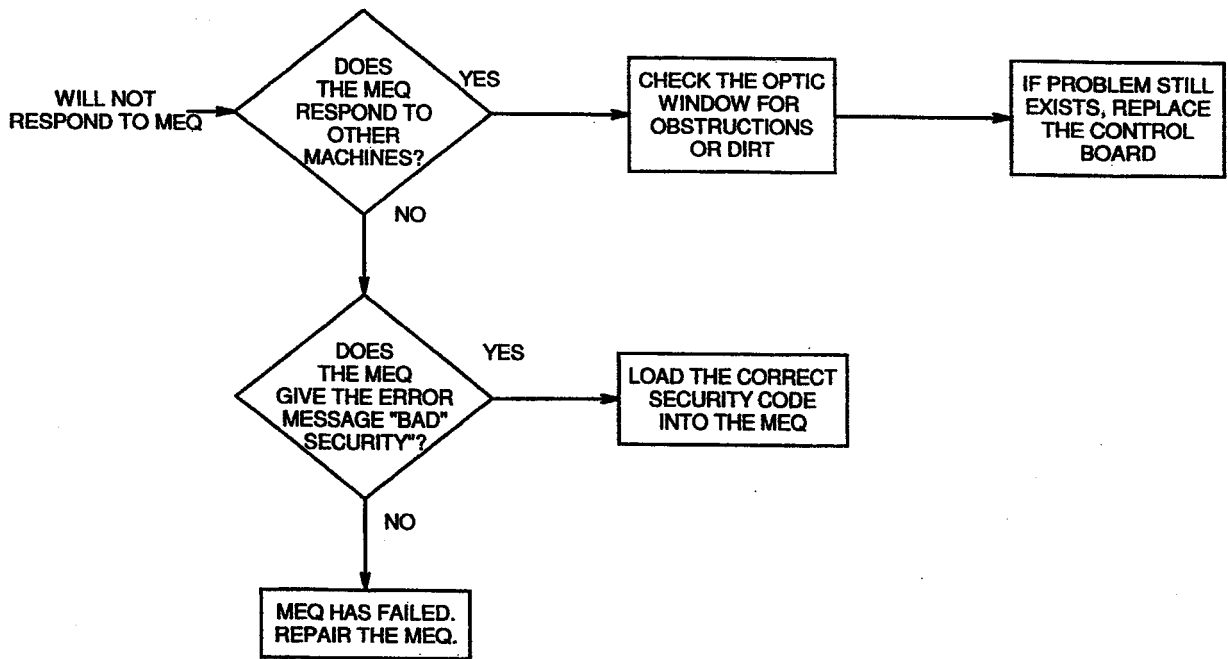
CAUTION

Except as necessary to perform a particular step in servicing a product, the electrical power supply should ALWAYS be disconnected when servicing a product.

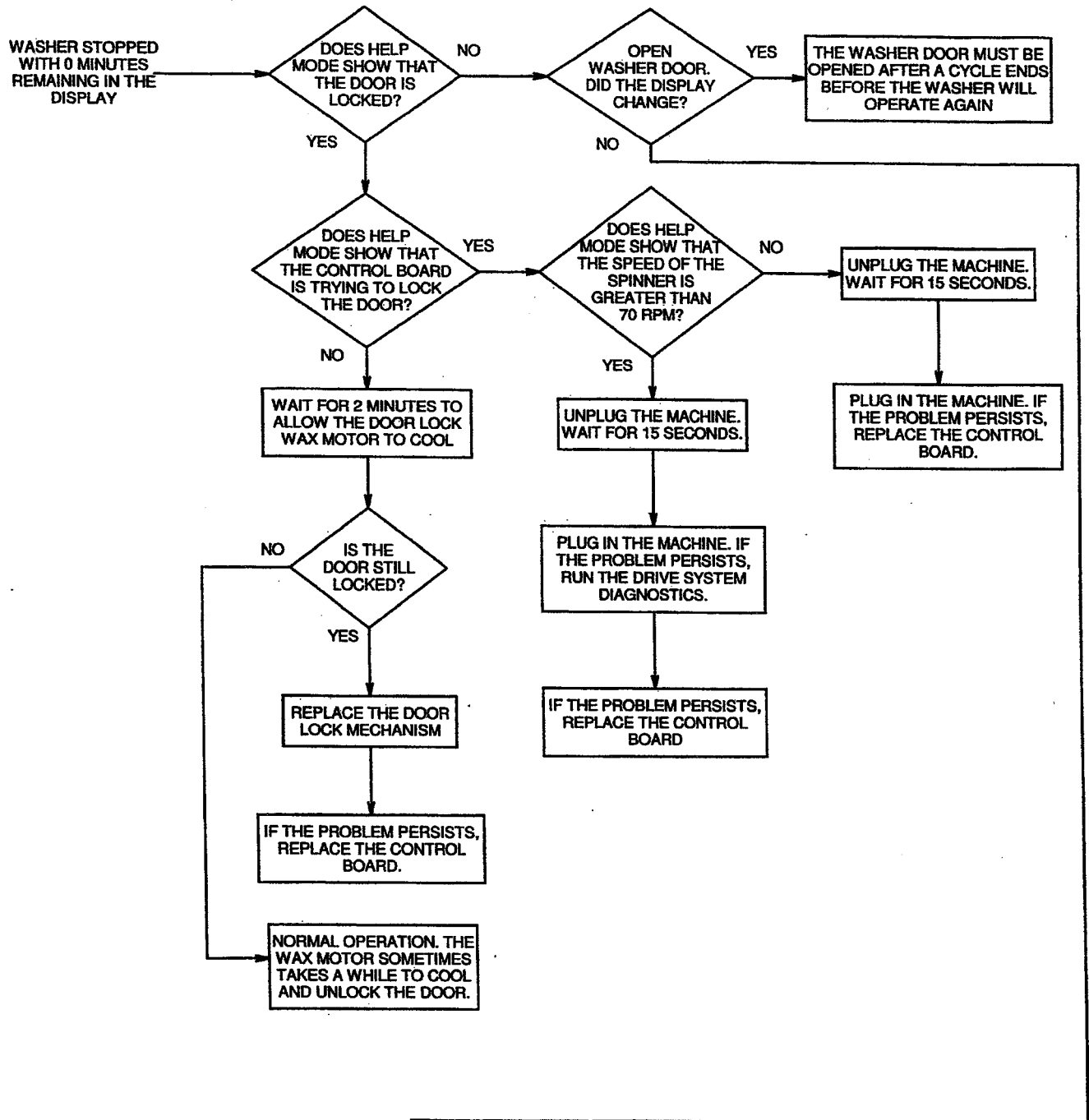


CAUTION

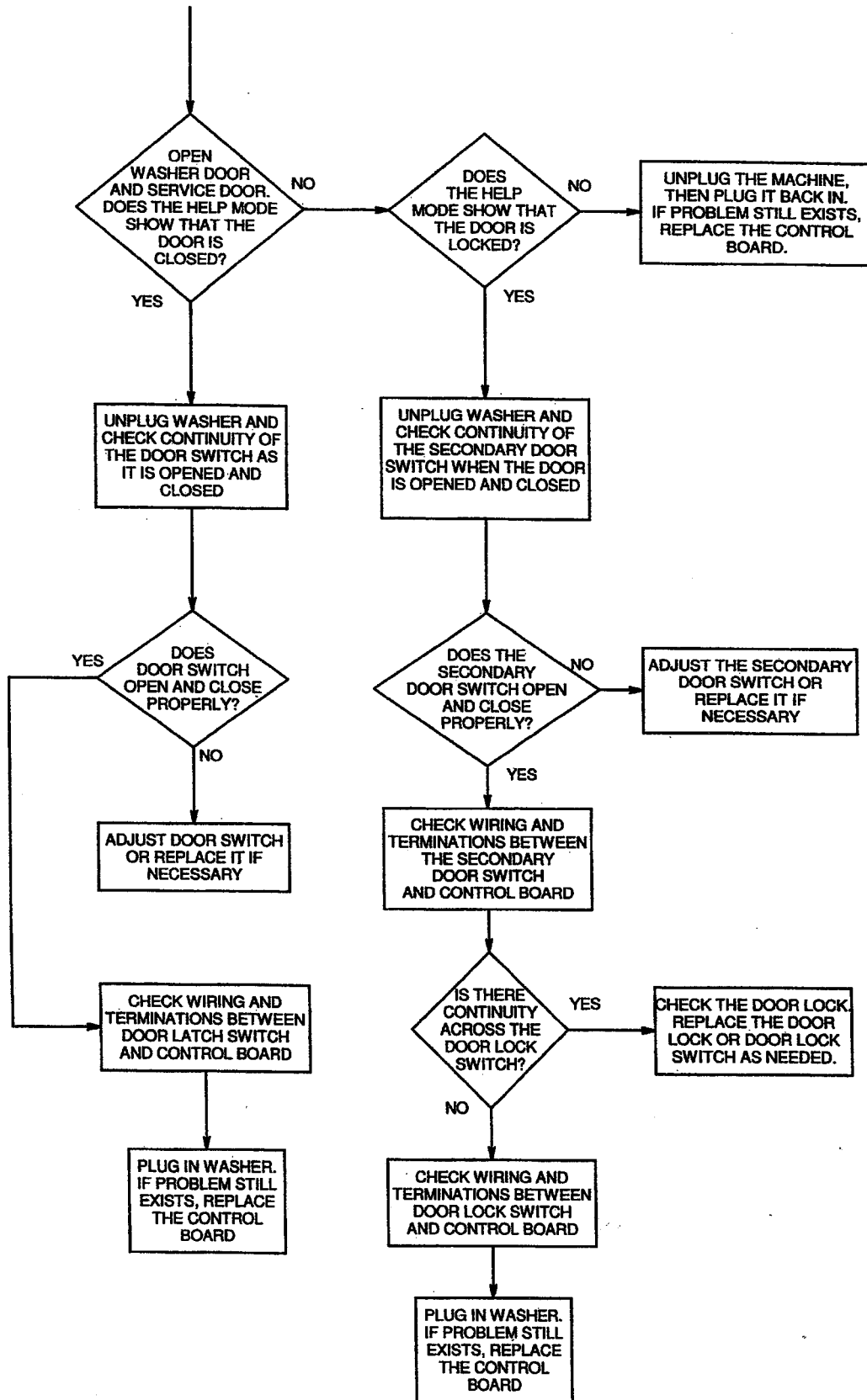
Except as necessary to perform a particular step in servicing a product, the electrical power supply should ALWAYS be disconnected when servicing a product.



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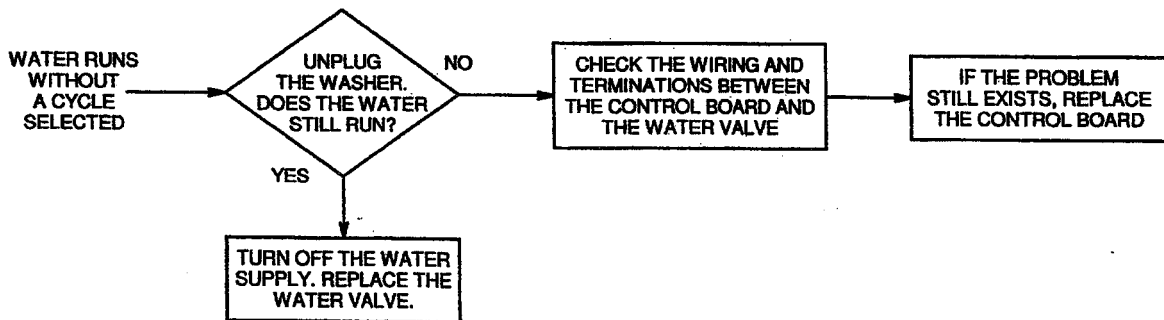
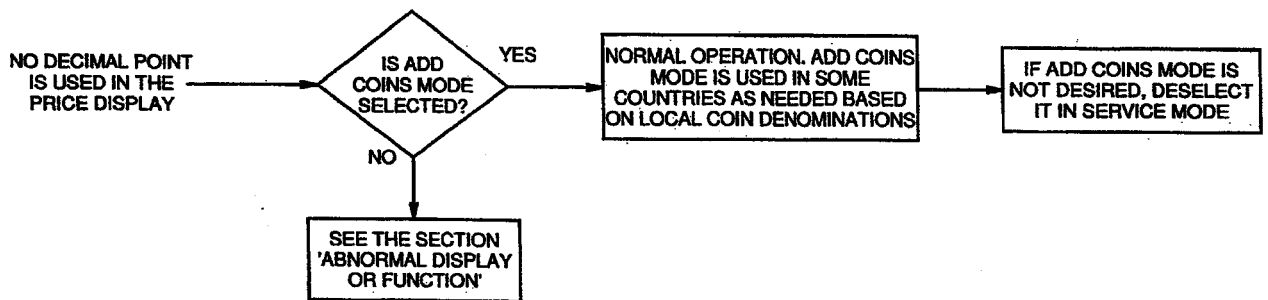
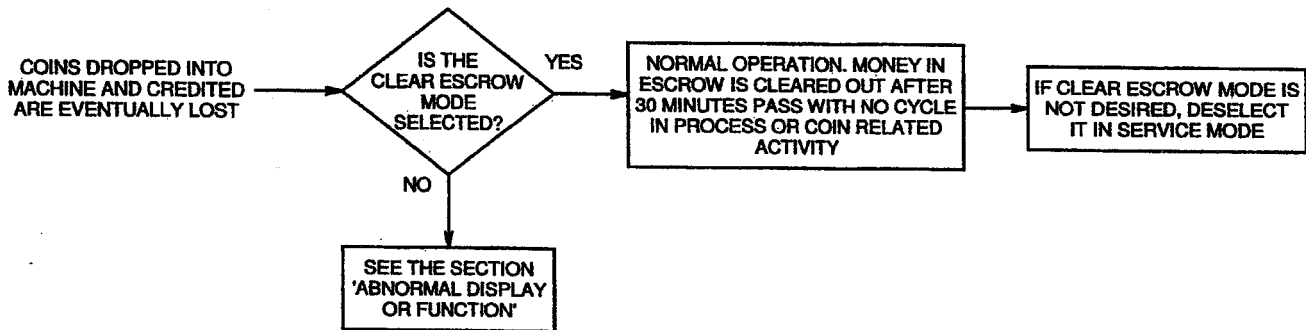
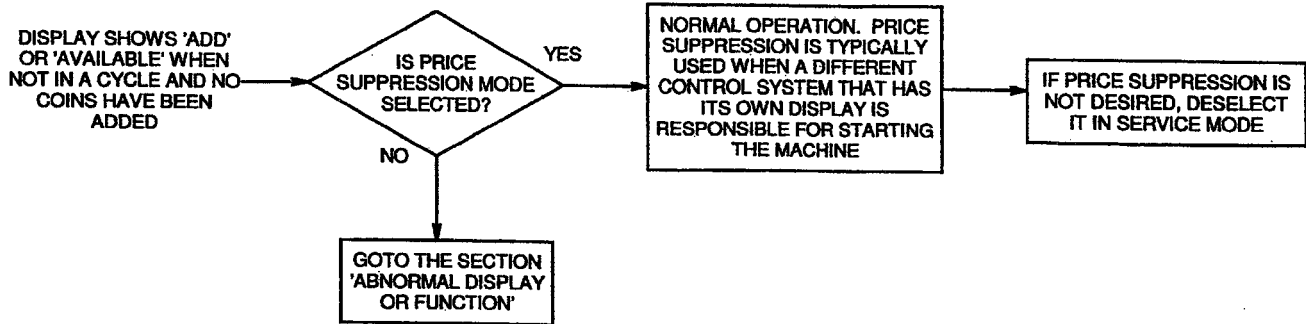


CAUTION
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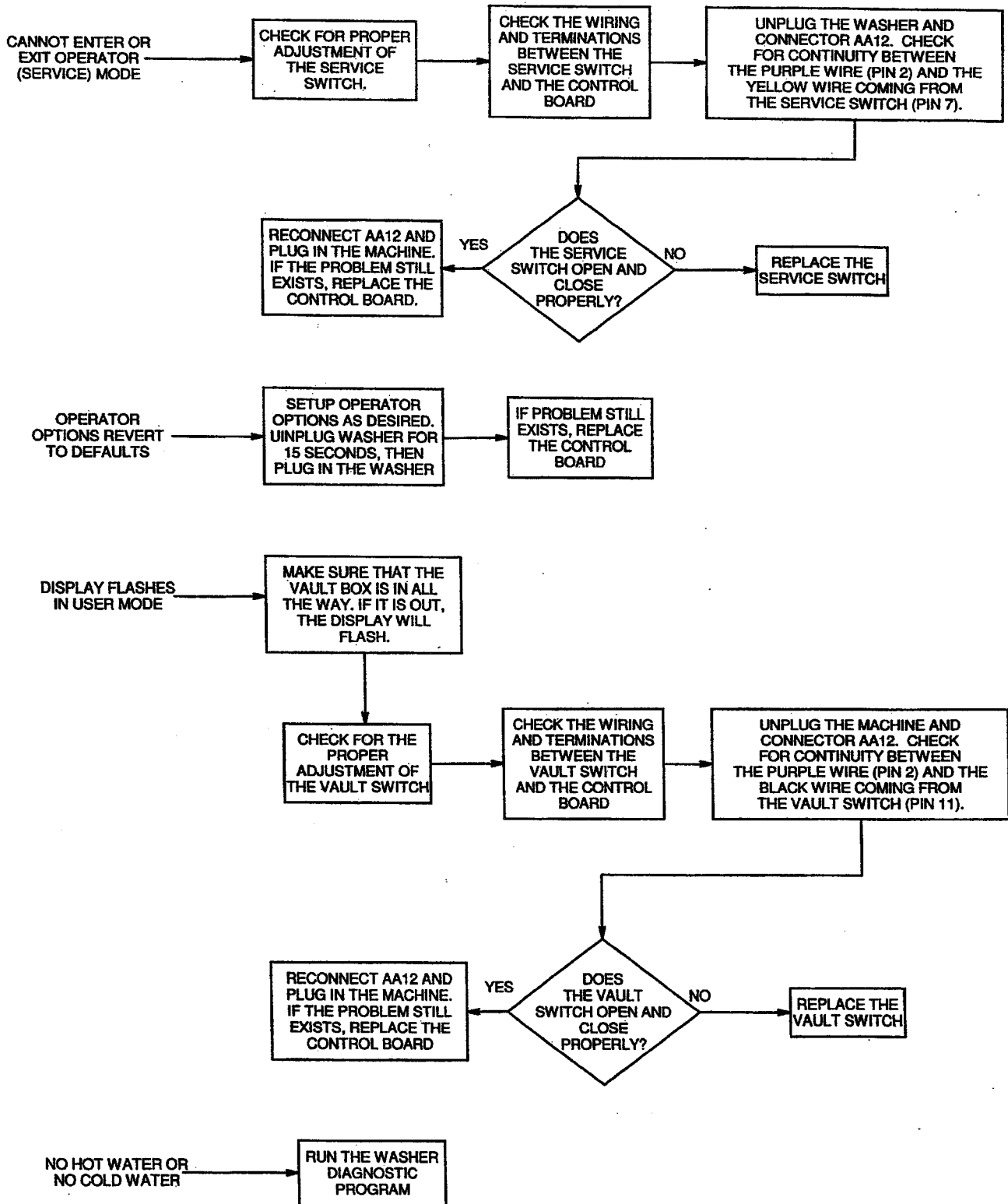
CAUTION

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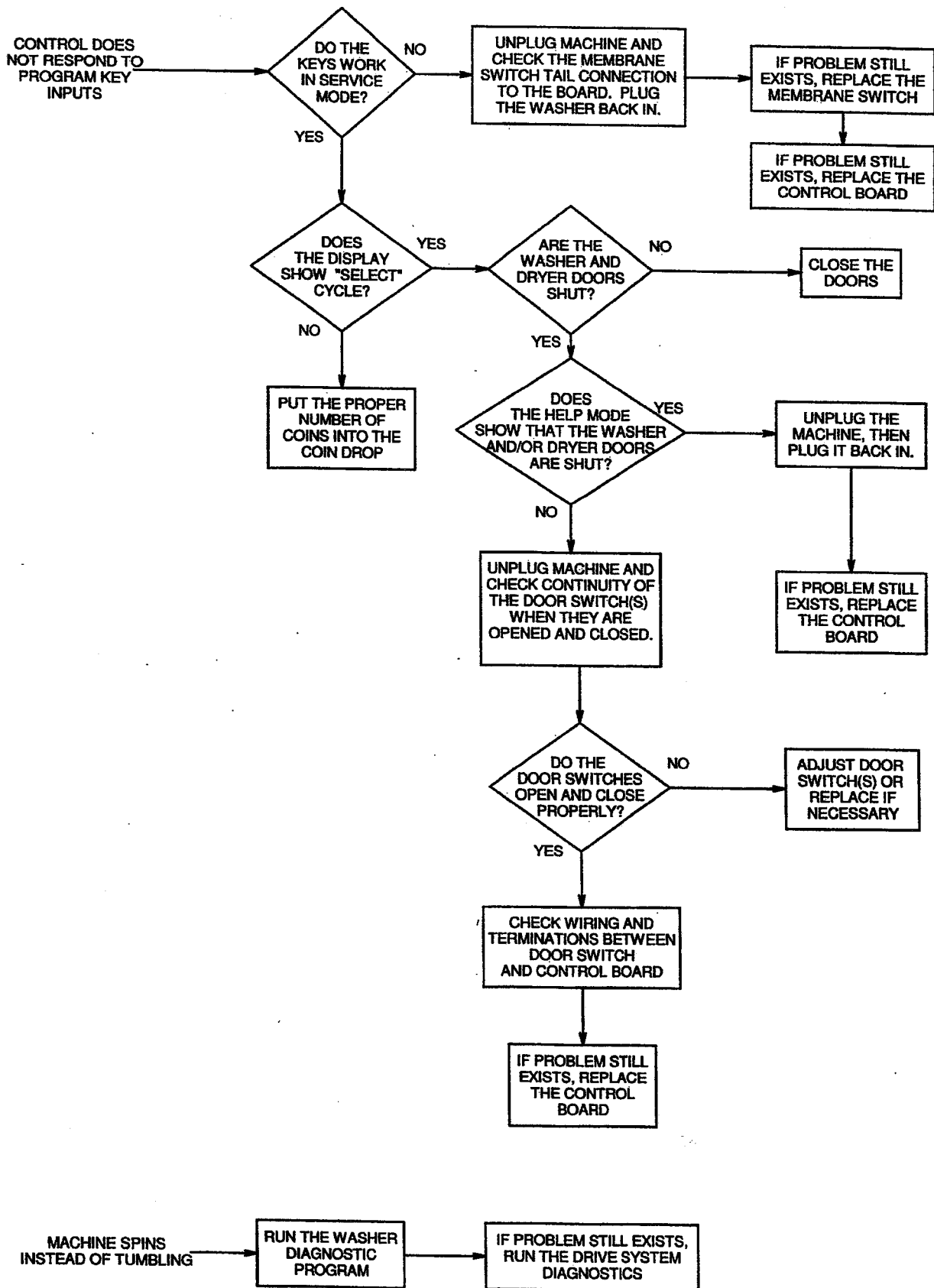
CAUTION

Except as necessary to perform a particular step in servicing a product, the electrical power supply should ALWAYS be disconnected when servicing a product.



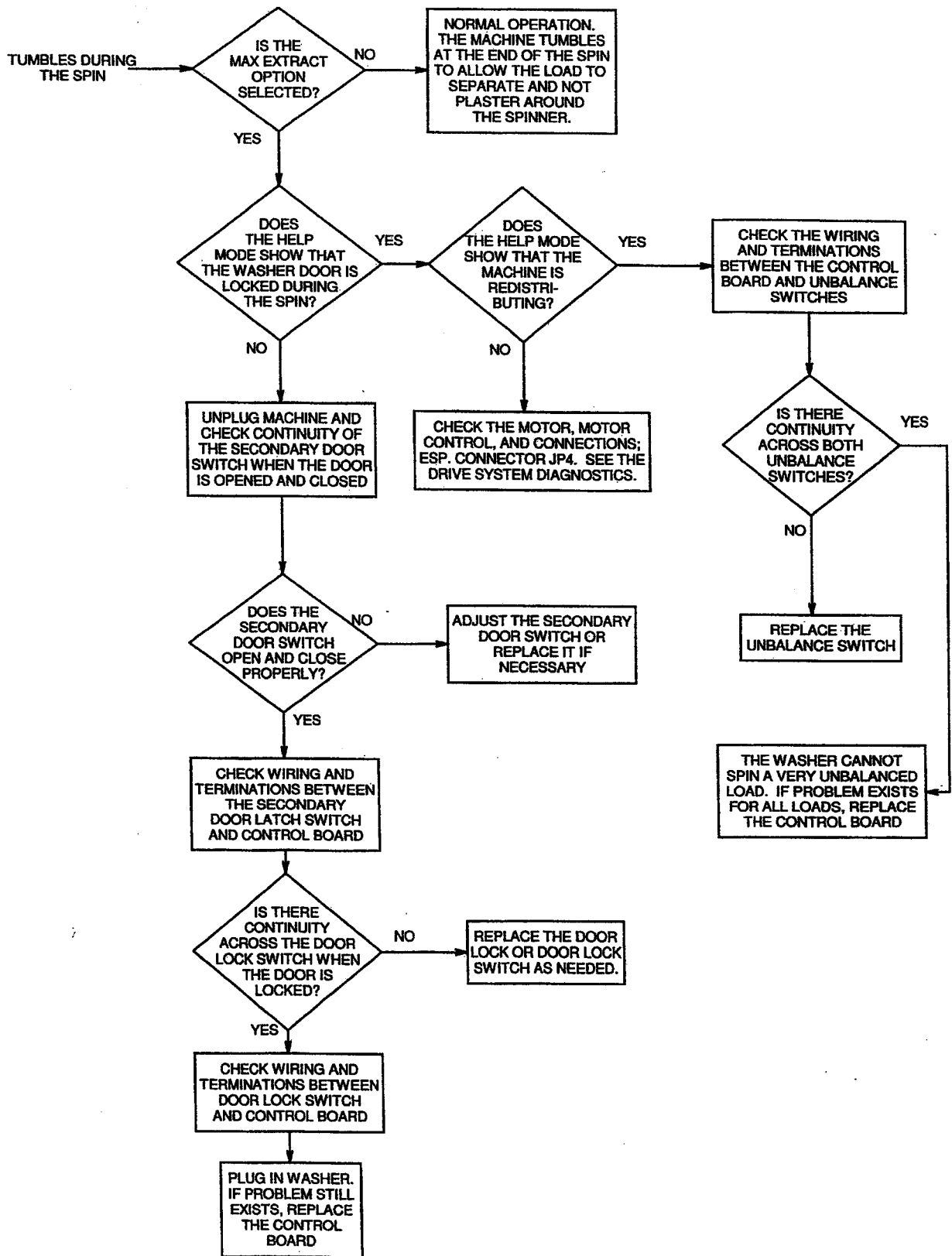
CAUTION

Except as necessary to perform a particular step in servicing a product, the electrical power supply should ALWAYS be disconnected when servicing a product.



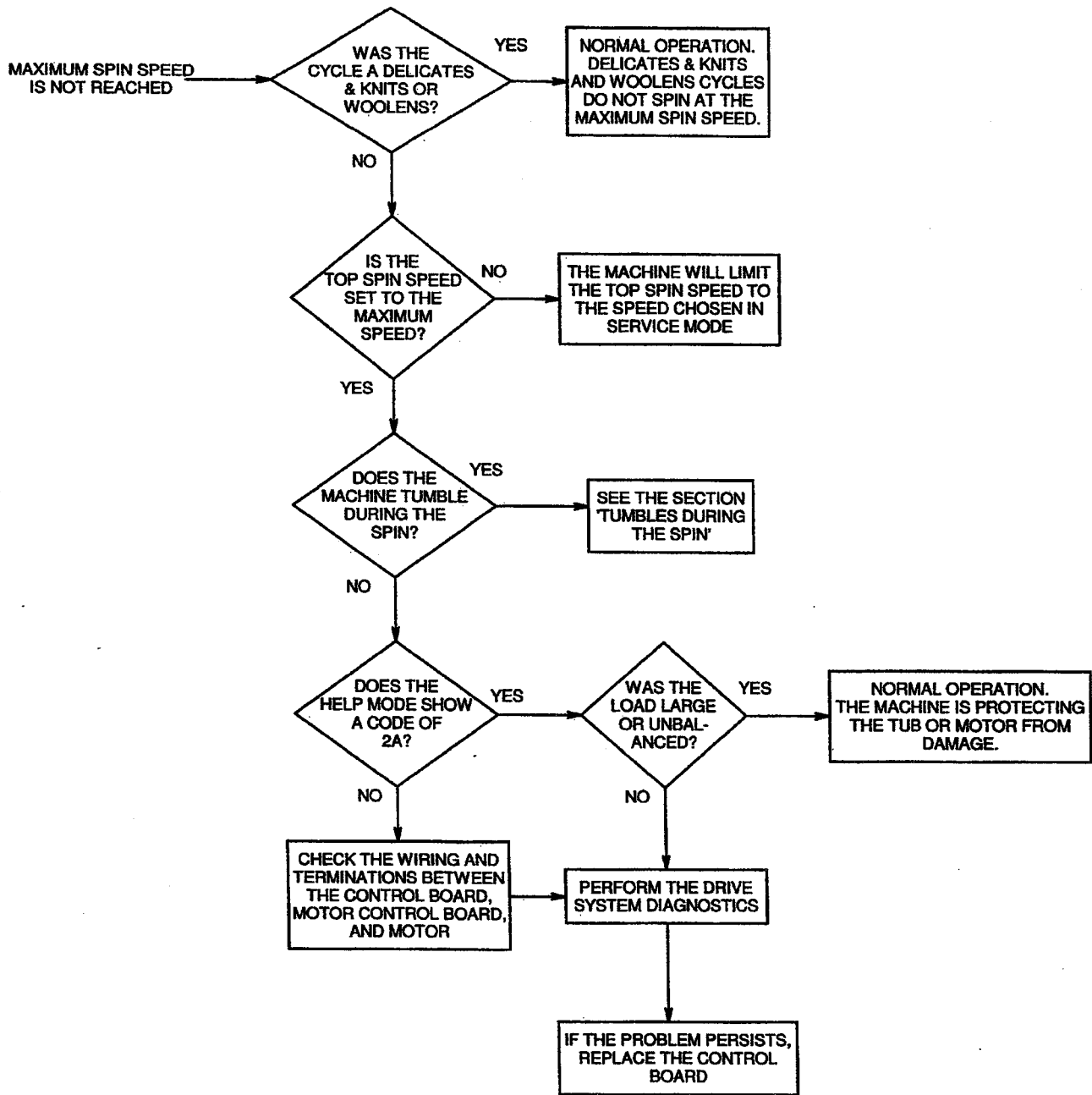
CAUTION

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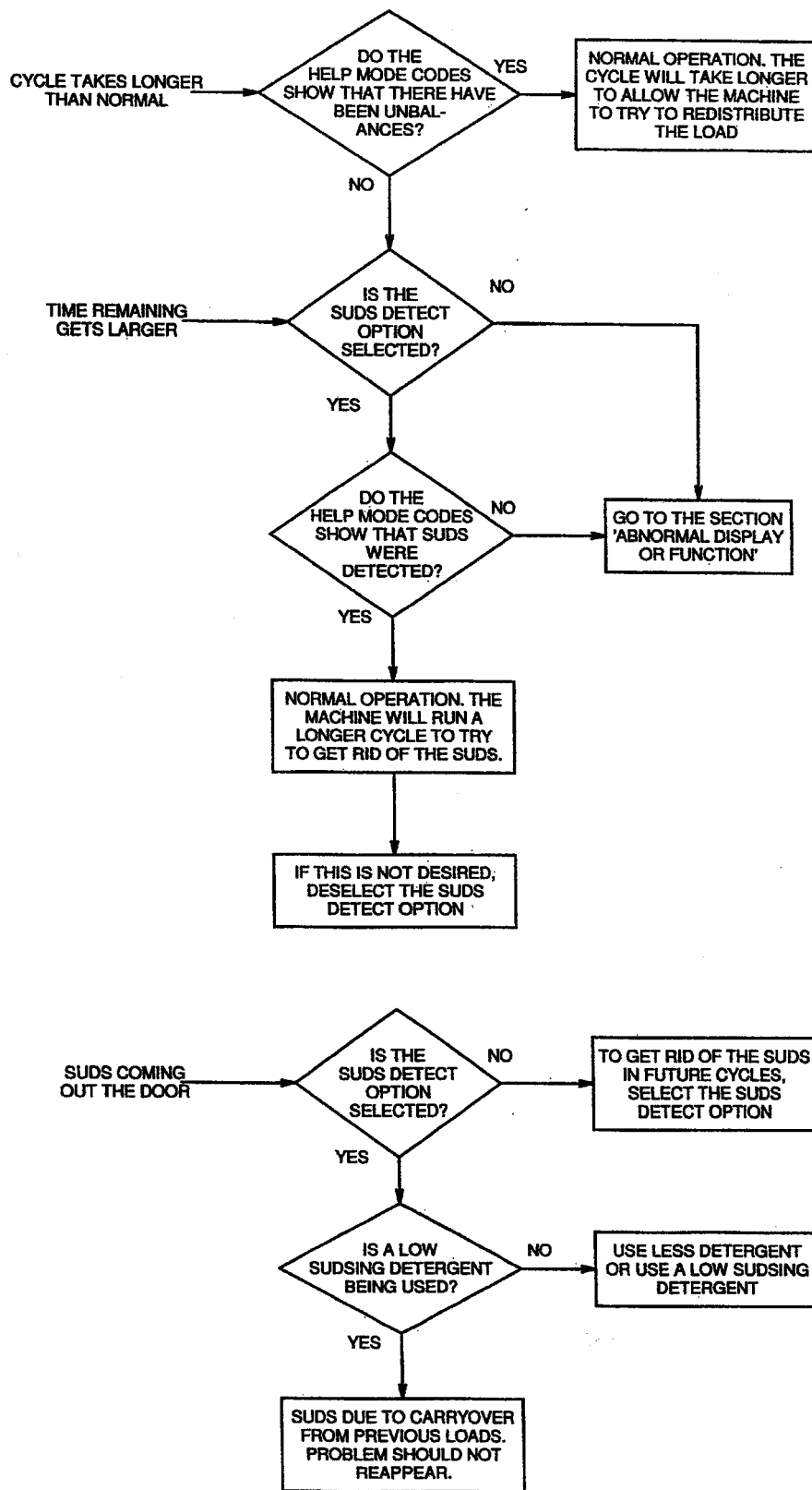
CAUTION

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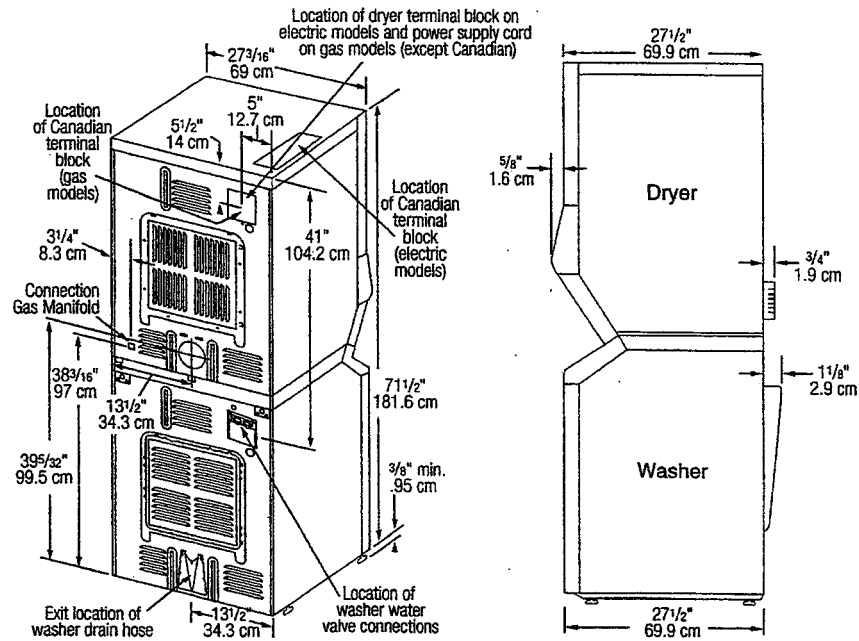


CAUTION

Except as necessary to perform a particular step in servicing a product, the electrical power supply should ALWAYS be disconnected when servicing a product.

SECTION 5. SPECIFICATIONS & SCHEMATICS

SPECIFICATIONS - WASHER



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CAPACITY	2.9 Cubic Feet		
ELECTRICAL	120 volts, 60 Hz; Requires 15 amp circuit breaker or fused electrical supply. Power cord must be connected to a properly grounded and polarized outlet.		
MOTOR	Switched Reluctance Motor controlled by a microprocessor motor control board. Motor pulley ratio (motor to spinner RPM) 14 to 1.		
POWER USAGE	Motor Input:	During Wash Tumble	- 150 Watts
		During Rinse Tumble	- 175 Watts
		Top Spin	- 800 Watts
	(Wattage readings taken with no clothes in spinner.)		
TUMBLER SPEED	Wash Tumble	47-51 RPM	
	Rinse Tumble	47-51 RPM	
	High Speed Spin	800 RPM (± 50 RPM based upon optimum spin performance.)	
WATER USAGE	Water pressure should be 20-120 p.s.i. (1.06-8.44 kg/cm) at inlet hose connection. Total water usage is approximately 18-24 gallons; varies with clothes load.		
HOSE LENGTHS	Four-foot inlet hoses with inlet washers and attaches to water valve. Drain hose attaches to pump and will accommodate 36" drain stand pipe.		
SCREW & BOLT TORQUES	Bolt, Counter Weight	8 ft. lbs.	(± 3 ft.lbs)
	Bolt, Spin Pulley	33 ft.lbs	(± 3 ft. lbs)
	Bolt, Belt Adjuster	90 in. lbs	(± 10 in. lbs)
	Screw, Front Baffle	25 in. lbs	(± 1 in. lbs)
	Screw, Rear Baffle	18.5 in. lbs	(± 1 in. lbs)
	Clamp, Hoses	15+in. lbs	(± 4 in. lbs)
	Nuts, Spinner Support	18 ft. lbs	(± 3 ft. lbs)
	Nuts, Suspension Struts	7 ft. lbs	(± 3 ft. lbs)

SPECIFICATIONS - DRYER

AIR FLOW	220 cubic feet (6.2 cu. m) per minute
CAPACITY	6.0 cubic feet
ELECTRICAL	GAS DRYER - 120 Volts, 60 Hz; Requires 15 amp circuit breaker or fused electrical supply. ELECTRIC DRYER - 240 Volts, 60 Hz; Requires 30 amp circuit breaker or fused electrical supply. Power cord must be connected to a properly grounded outlet. Approximately 5900 watts for electric model dryer (6300 watts including washer).
MOTOR	1/4 H.P. rated; 120 Volt AC; 60 Hz; Thermoprotected against overload; auto-reset.
HEAT SOURCE	·ELECTRIC: 240 Volt AC 3-wire; 5600 Watt heating element; 30 Amp fuse/circuit breaker. ·GAS: Single port burner; 24,000 BTU/HR; Electric ignition; Automatic shut-off
TUMBLER SPEED	50 RPM

MISCELLANEOUS

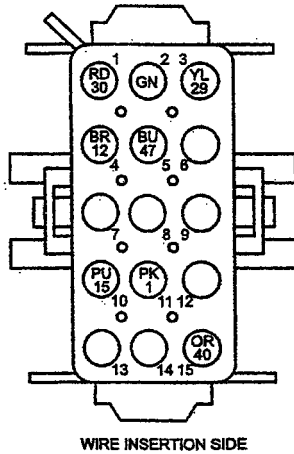
Washer Wattages:

The following wattages are with no load:

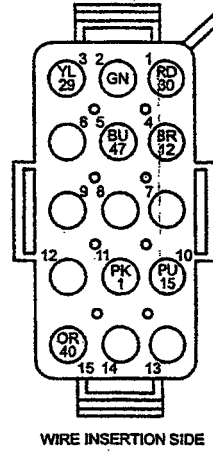
<u>Function</u>	<u>Wattages</u>
Tumbling (empty) & water fill	50-70
Tumbling (full wash level)	110-120
Tumbling (full rinse level)	140-150
Draining (no tumble) with water	45-50
Draining (no tumble) no water	30-35
Spinning (100 rpm)	85-90
Spin Acceleration (100-200 rpm)	130-150
Spinning (400 rpm)	160-170
Spinning (850 rpm)	400-410

HARNESS CONNECTION - MLE/MLG19

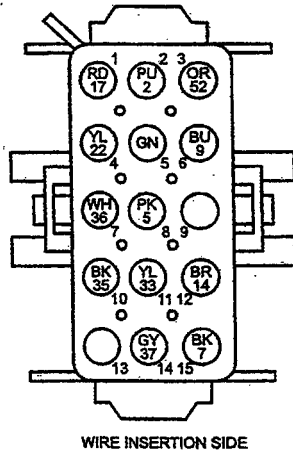
LOWER INTERCONNECT CAP (RH)



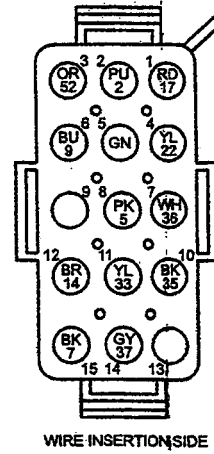
UPPER INTERCONNECT CAP (RH)



LOWER INTERCONNECT CAP (LH)

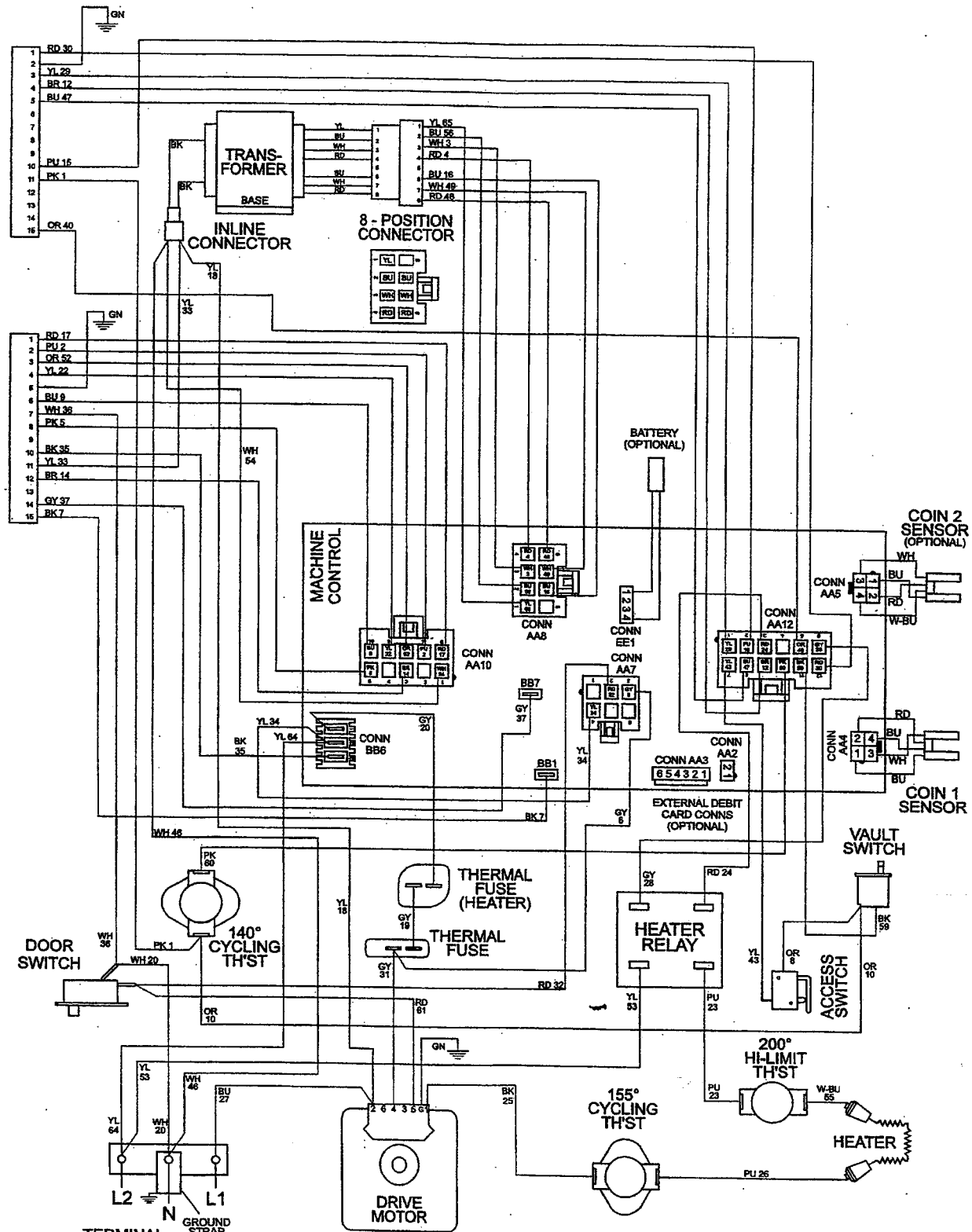


UPPER INTERCONNECT CAP (LH)



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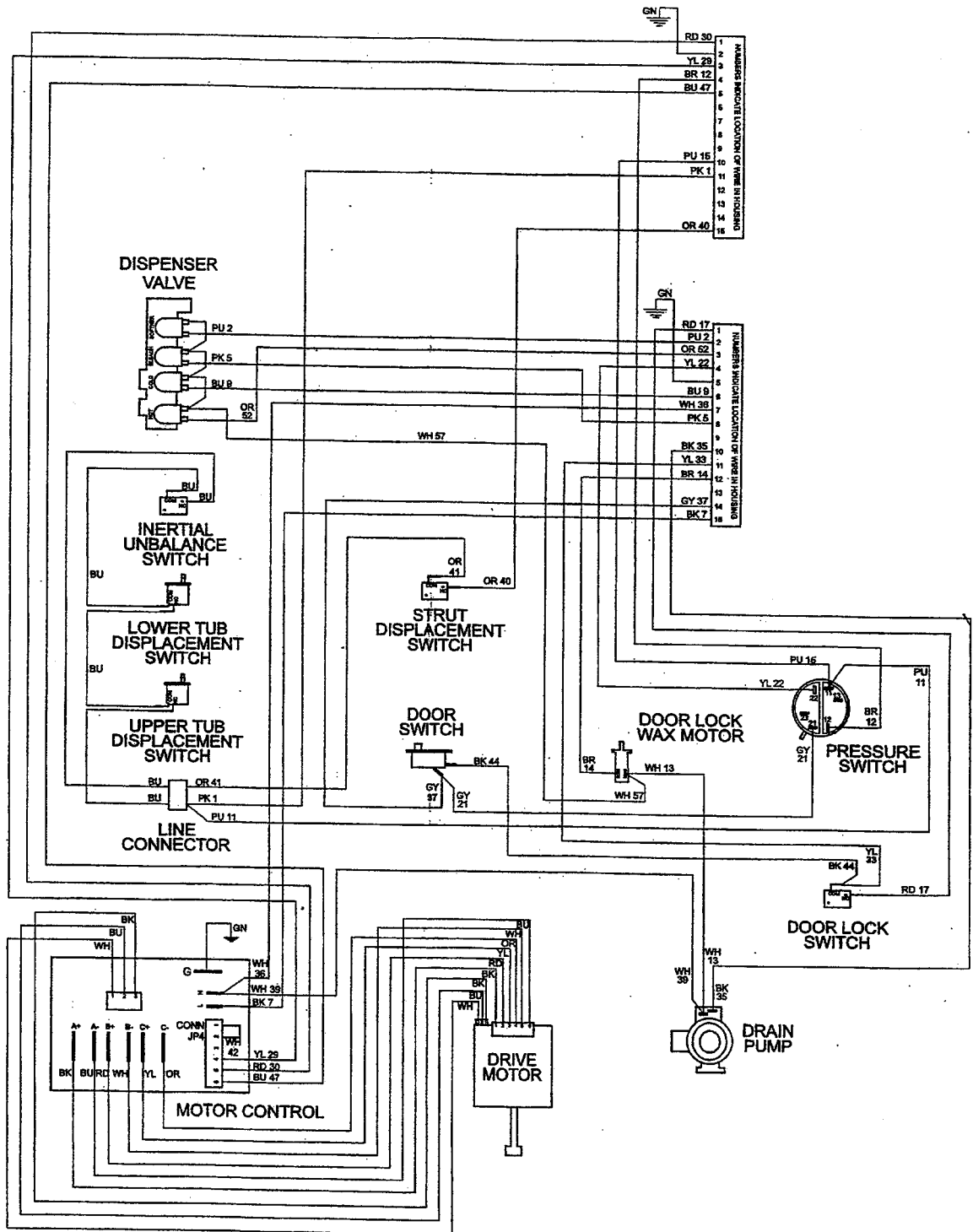
WIRING DIAGRAM - MLE19 UPPER DRYER



UPPER DRYER
WIRING CONNECTION DIAGRAM

SL227TIF

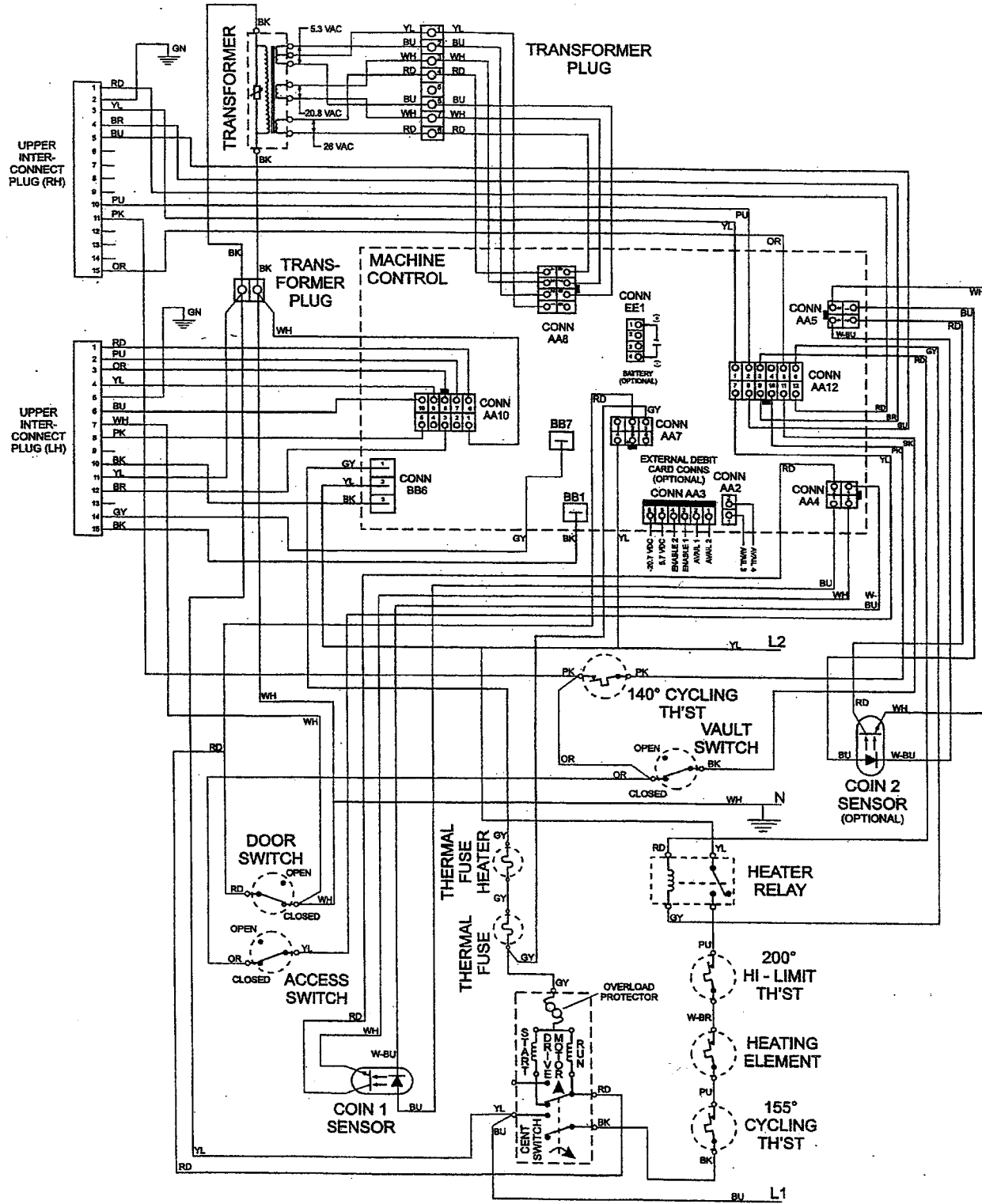
WIRING DIAGRAM - MLE19 LOWER WASHER



LOWER WASHER
WIRING CONNECTION DIAGRAM

SL228TIF

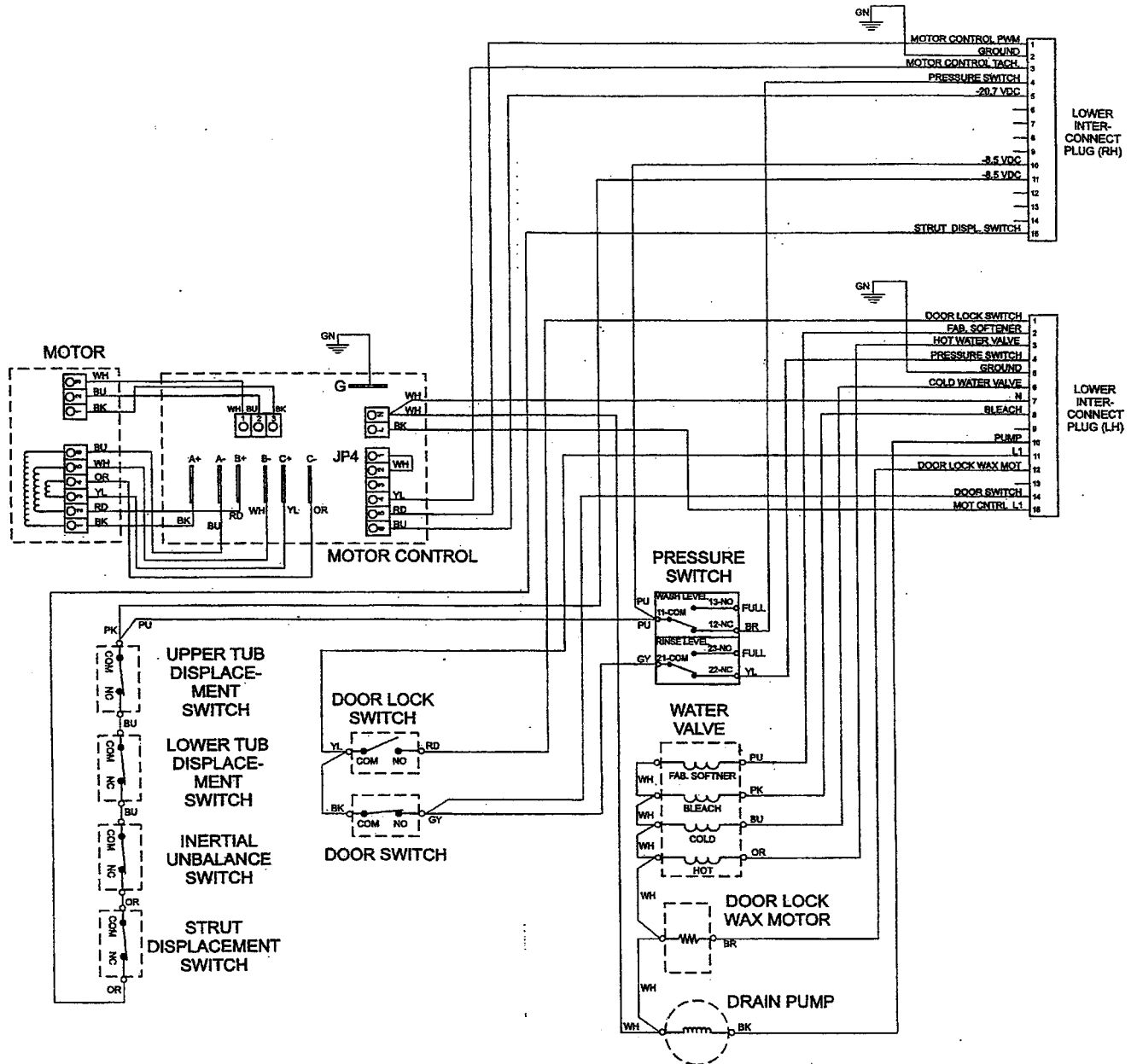
ELECTRICAL SCHEMATIC - MLE19 UPPER DRYER



UPPER DRYER
ELECTRICAL SCHEMATIC

SL226TIF

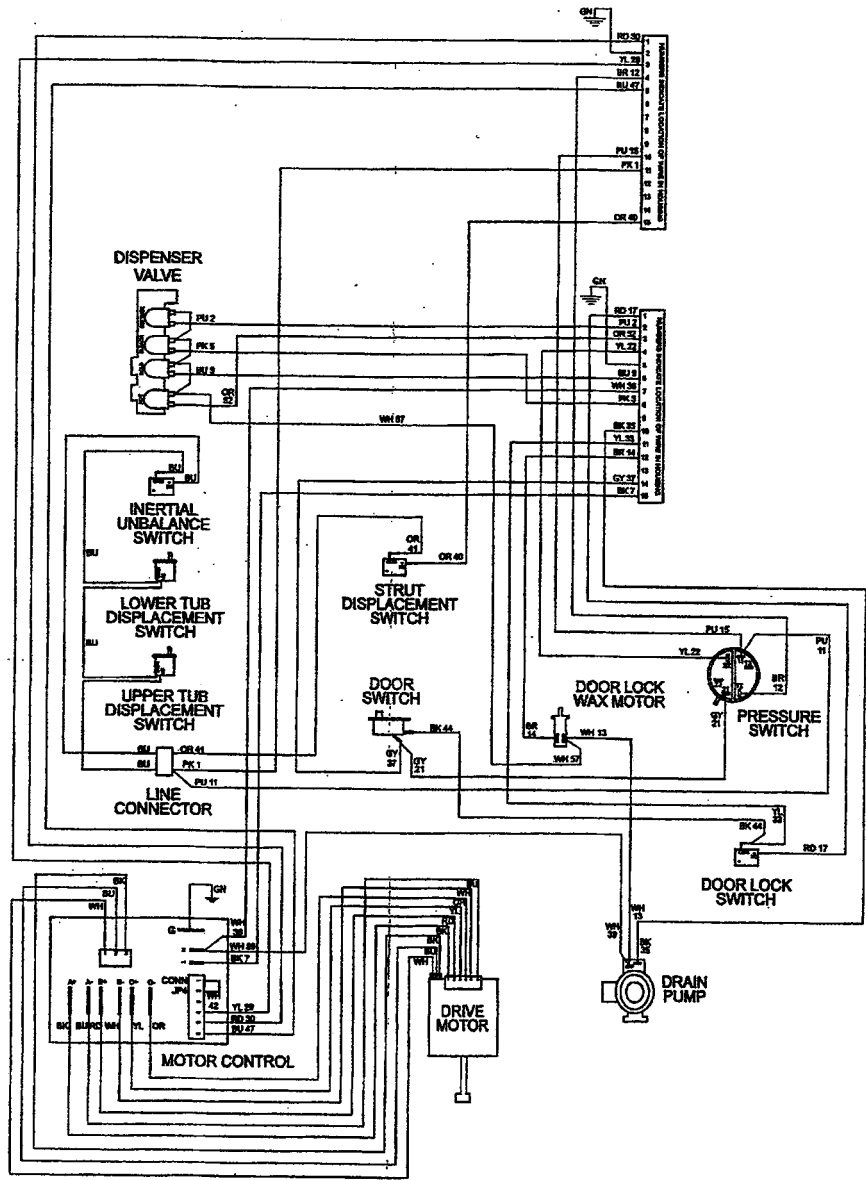
ELECTRICAL SCHEMATIC - MLE19 LOWER WASHER



LOWER WASHER
ELECTRICAL SCHEMATIC

SL225TIF

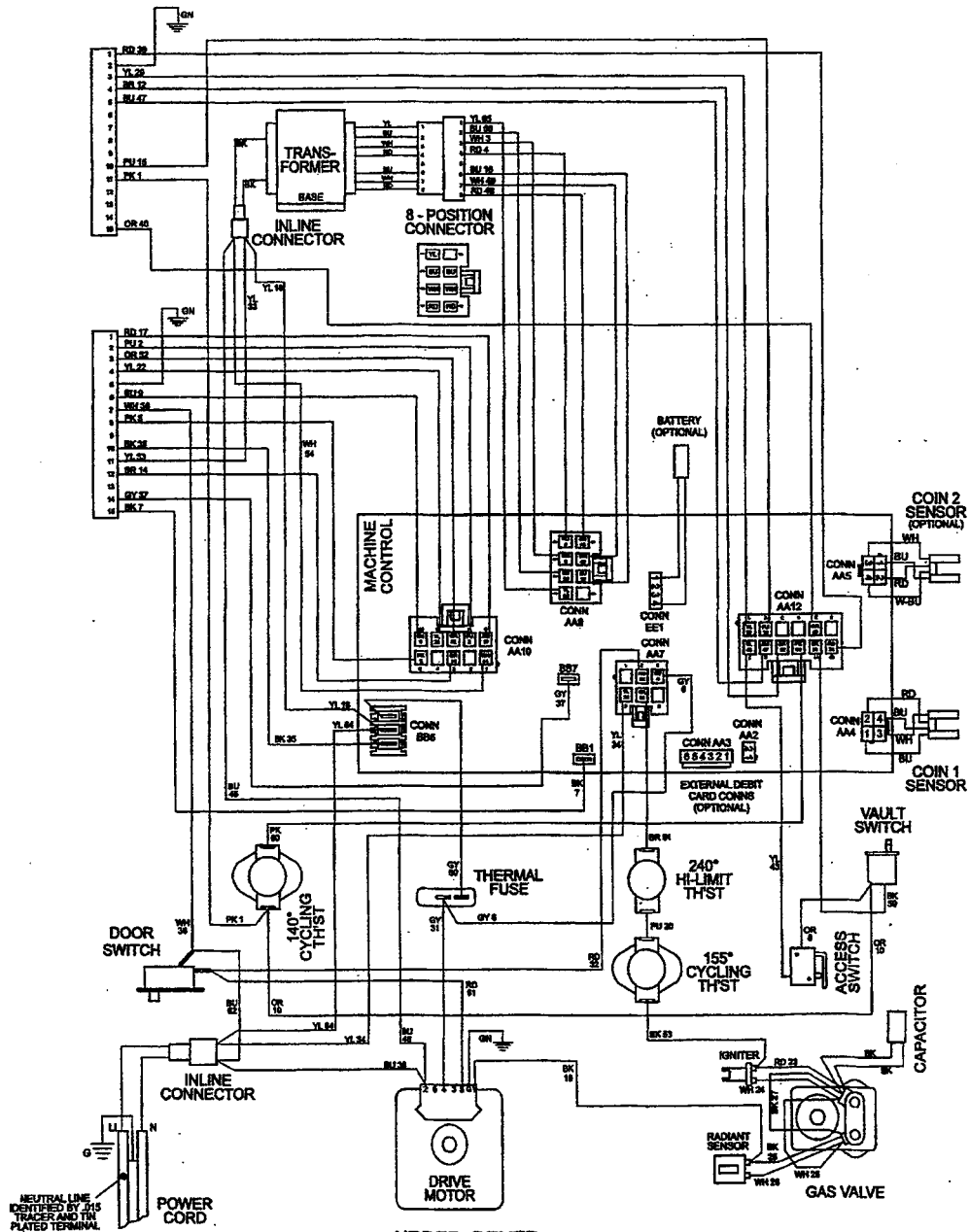
WIRING DIAGRAM - MLG19 LOWER WASHER



LOWER WASHER
WIRING CONNECTION DIAGRAM

SL223TIF

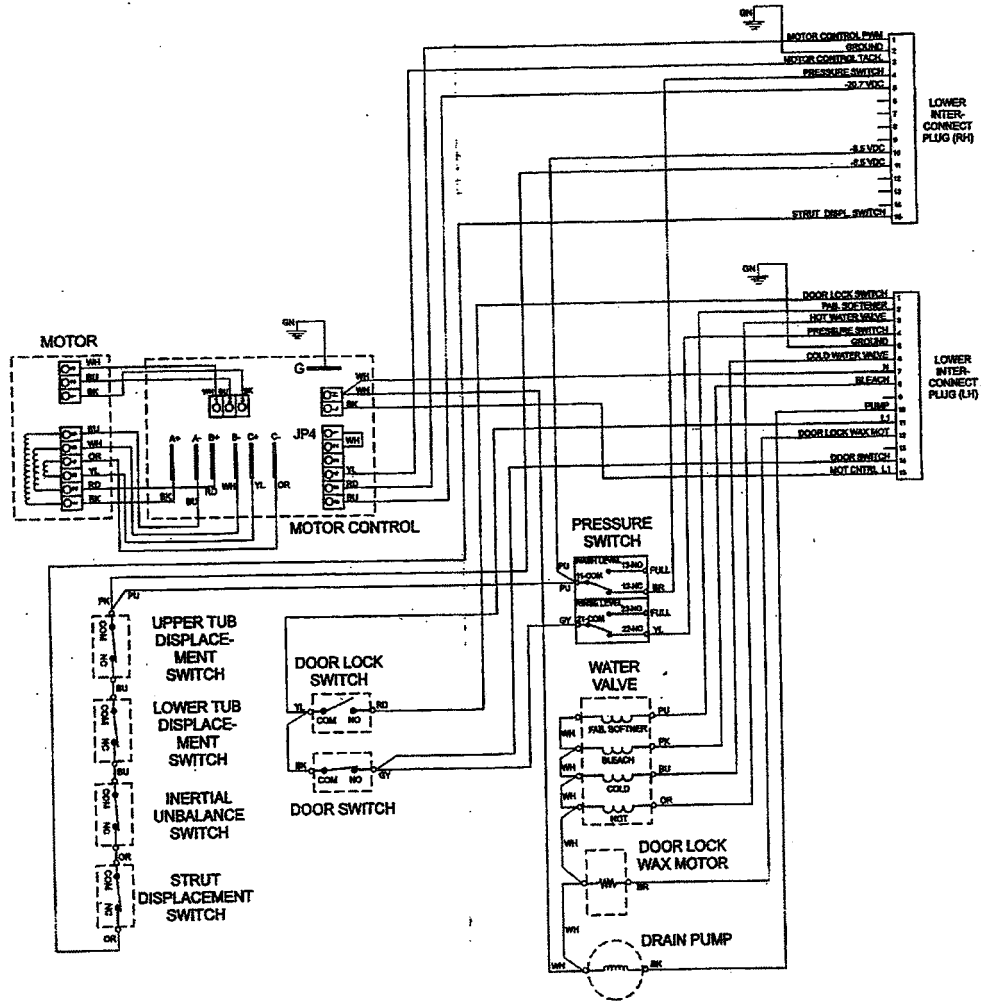
WIRING DIAGRAM - MLG19 UPPER DRYER



UPPER DRYER
WIRING CONNECTION DIAGRAM

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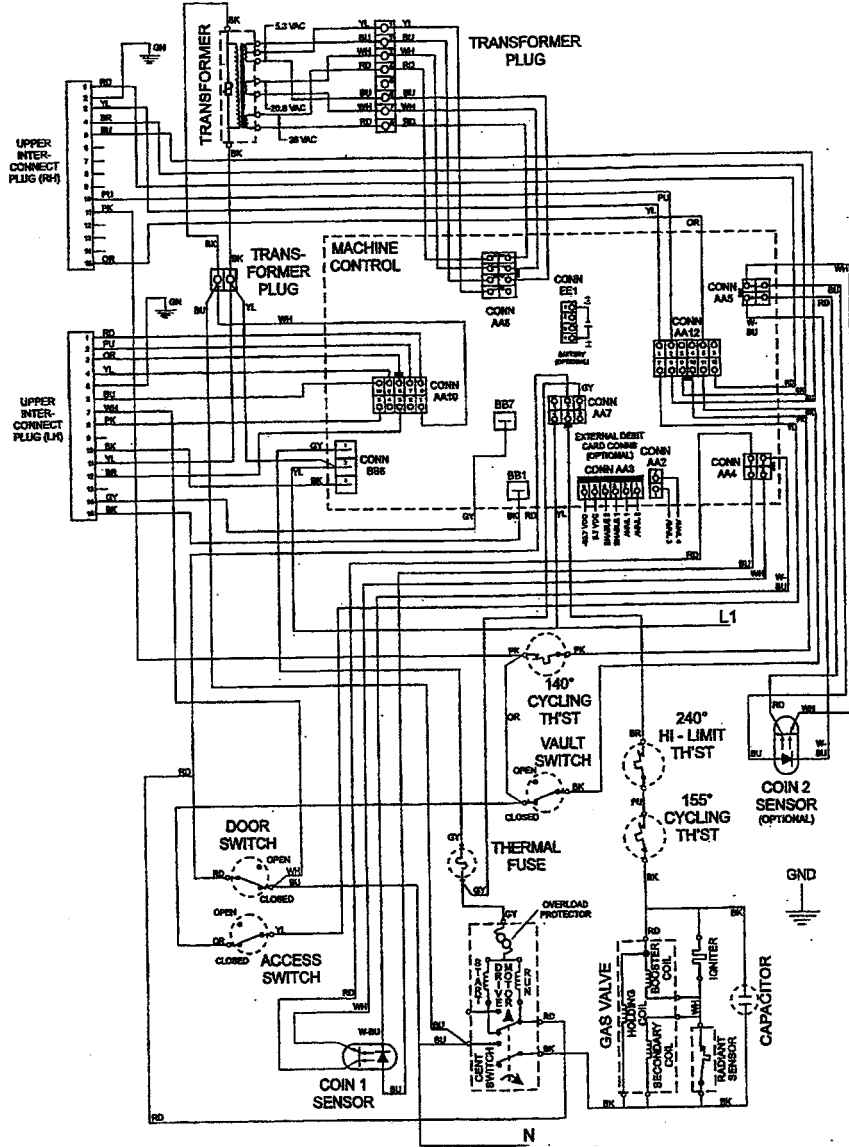
ELECTRICAL SCHEMATIC - MLG19 LOWER WASHER



LOWER WASHER
ELECTRICAL SCHEMATIC

SL221TIF

ELECTRICAL SCHEMATIC - MLG19 UPPER DRYER



UPPER DRYER
ELECTRICAL SCHEMATIC

SL218TIF

MAYTAG

Maytag Appliances Sales Company

Customer Service
240 Edwards St.
Cleveland, TN 37311