TRAINING MANUAL

MAYFLOWER WASHER & DRYER (2004 LINEUP)

MODELS COVERED:

WM2077CW
WM2277HB
WM2277HW
DLE3777
DLG3788
DLE5977
DLE5977B
DLG5988
DLG5988B

LG Service

Digital Appliance

MAYFLOWER WASHER

MAYFLOWER DRYER

MAYFLOWER WASHER

OVERVIEW

INTRODUCTION

The 2004 line-up of LG washer and dryers is called the Mayflower line. The 2003 line-up is the Columbus line.

MAYFLOWER WASHER		WM2077CW	WM2277HW	WM2277HB
Color		White	White	Black
Capacity		3.22 ft3 (3.72 ft3 IEC)	3.22 ft3 (3.72 ft3 IEC)	3.22 ft3 (3.72 ft3 IEC)
Power Required		120 VAC, 60 Hz	121 VAC, 60 Hz	122 VAC, 60 Hz
Energy Consumption	Washing	280 W	280 W	280 W
	Drain Motor	80 W	80 W	80 W
	Water Heater	N/A	1000 W	1000 W
Water Pressure		4.5 - 145 psi (31 - 1000 kPa)		
Motor		Direct Drive	Direct Drive	Direct Drive
Water Heater		No	Yes	Yes
Temperature Settings		5 options	5 options	5 options
Cycles		7	7	7
Size		27" (W), 29 3/4" (D) (50 13/16" with dooropen), 38 11/16" (H)		
Weight		190 lbs.	190 lbs.	190 lbs.
Delay Wash		9 hours	12 hours	12 hours
Wash Speed		42 rpm	42 rpm	42 rpm
Spin Speed (Max. RPM)		1000 rpm	1100 rpm	1100 rpm
Water Circulation		No	Yes	Yes

OTHER FEATURES

CHILD LOCK - A key defeat function prevents anyone who does not know how to unlock the keys from changing the settings while the washer is operating.

DIRECT DRIVE ELECTRIC MOTOR - This is an advanced, brushless DC motor that is directly attached to the drum. The Direct Drive system eliminates the need for a belt and pulley system in the washer, decreasing wear, vibration, and noise. In addition, the Direct Drive motor serves to optimize energy consumption in the washer.

WATER HEATER - Many of the Mayflower Washer models provide an internal heater to augment the hot water supply. This feature can thereby aid in sanitizing the laundry.

ROLLER JETS - This feature is part of the laundry tumbling system built onto the drum. As the Roller jet revolves through the bottom of the laundry tub, its roller balls help to gently stir the clothes as the gravity-operated jets pick up water. On the top part of the Roller Jet's revolution, the accumulated water falls on the clothing below for more effective cleansing.

WATER CIRCULATION - Those models with Water Circulation increase washing effectiveness by recycling water and detergent, as well as by eliminating excess suds.

TILTED DRUM - The Mayflower Washer provides a wash drum, sometimes called a Tiltub, with a 10° incline to ease loading and unloading of the washer.

SAFETY PRECAUTIONS

Servicing a washing machine carries potential risks of fire, explosion, property damage, personal injury, and loss of life. To minimize the possibility of these risks, please follow the safety precautions noted in the General Safety Information section. Additionally, please observe the following washer-specific notices.

GROUNDING INSTRUCTIONS

This appliance must be properly grounded to reduce the risk of electric shock in case of a malfunction or breakdown. Accordingly, it is furnished with an equipment-grounding power cord. The appliance must receive power through this cord and from a corresponding outlet that is installed and grounded according to local codes and ordinances.

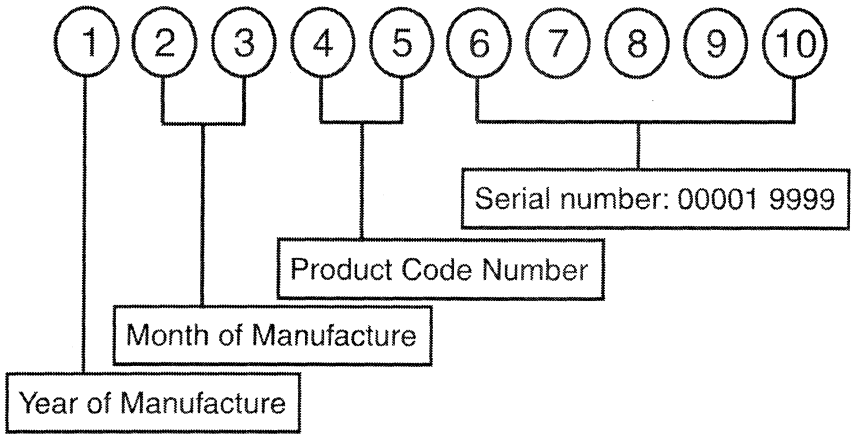
- Do not use an extension cord or an adapter with this washer.
- Do not tamper with the power cord.
- Do not use the washer with a power socket that does not meet local requirements or the requirements of the washer.
- Do not ground to a gas pipe.

OTHER SAFETY ISSUES

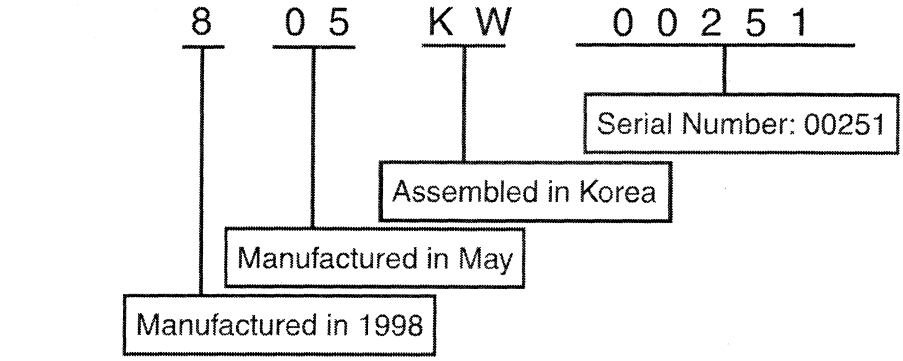
- Before attempting an installation or any service procedure, read and be very familiar with the washer's service manual.
- Do not install or store the washer in a location where it is exposed to the weather.
- In certain conditions, hydrogen gas can accumulate in a hot water system that has not been used for two weeks or more. Hydrogen is potentially explosive. Before servicing in such a situation, allow the hot water source(s) to run for several minutes to release any accumulated hydrogen. Do not smoke or use an open flame while performing this task.
- Never wash articles of clothing that have been soaked or spotted with flammable liquids. These liquids may include but are not limited to gasoline, kerosene, cleaning solvents, and cooking oil. These can emit explosive vapors or react chemically to cause a fire.
- Never add flammable liquids to a laundry load. These liquids can emit explosive vapors.
- If the washer needs to be removed from service, detach the door from the washer to prevent small children from being trapped inside. Also, remove and destroy the unit's power cord.

SERIAL NUMBER DESIGNATION

Use the illustration below to decipher manufacturing information from the serial number found on the unit to be serviced. Note that this serial number scheme is used for dryers as well as washers.



Example

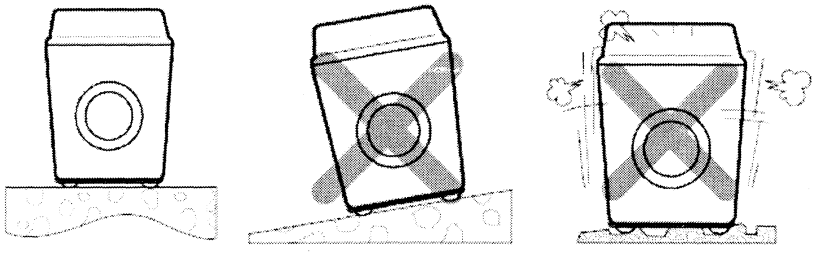


INSTALLATION

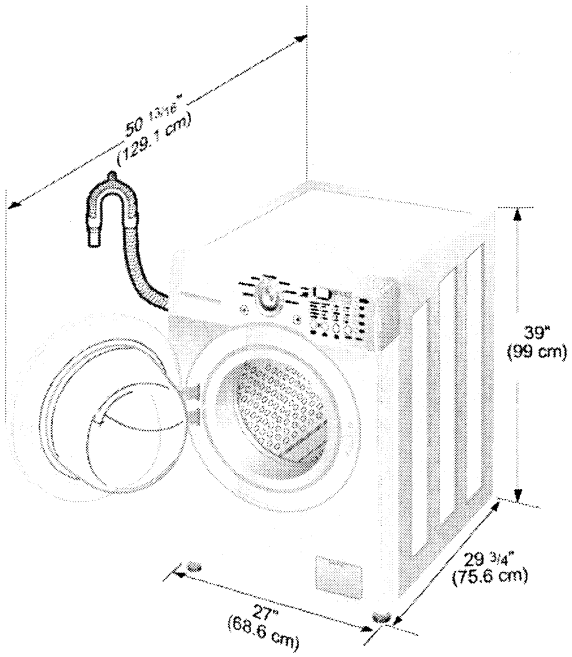
PREPARING FOR INSTALLATION

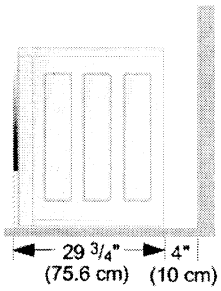
1) SELECT AN APPROPRIATE LOCATION

- The washer must be installed on a level, firm surface to avoid excess noise, vibration, and resulting appliance movement. The allowable incline of the floor should not exceed 1°.

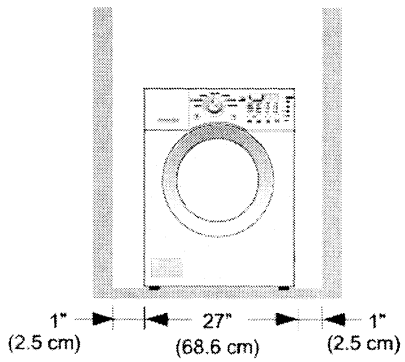


- There must be a minimum of 4.0 inches from the rear of the washer to the wall behind it. The door requires a clearance of about 2.0 feet in front of the washer and 1.5 feet to the side of the washer. If the unit is installed in an enclosed area, there must be a minimum of 1.0-inch clearance on either side of the unit. Furthermore, if the enclosed area has a door, minimum ventilation is required on the top and bottom of the door.





[Side view]

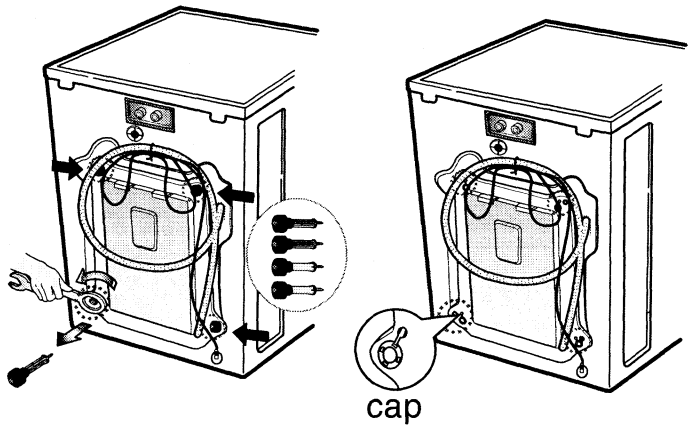


[Front view]

- The power outlet must be less than 60 inches from either side of the washer. The outlet must be properly grounded and compliant with local building codes. The use of an extension cord is not advised!
- Water supply pressure must be between 4.50 and 145 PSI (31 to 1,000 kPa). If water pressure exceeds this amount, a pressure reducer device must be used. Both hot and cold water supplies must be connected to the washer. Models containing water heaters cannot sufficiently heat a cold water supply.
- The drain hose, if extended vertically upward has a height of about 96 inches above the floor. However, if the hose is used with the hose retainer, some of this height is lost in the retainer's curvature. The hose itself is about 41 inches in length.
- Do not install the unit where it will be exposed to weather elements or freezing temperatures. Note: if the unit has been stored in a location where the temperature is below freezing, allow it to sit for several hours at room temperature.
- The warranty on this product does not cover damage from vermin. Keep the area surrounding the washer free of anything that would attract such vermin.

2) REMOVE THE SHIPPING BOLTS

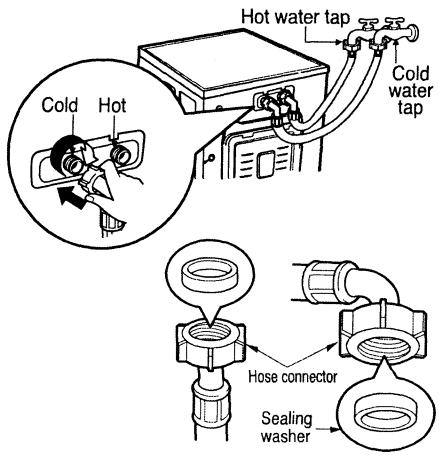
- These four bolts should be removed before operating the washer to prevent internal damage. A wrench is provided with the unit expressly for this purpose. Be sure to save the wrench and the bolts in case the unit will need to be moved in the future.
- Close the bolt holes with the caps provided.



CONNECTING THE WATER SUPPLY

Because of the length of the water supply hoses provided with the unit, the washer must be placed within 57 inches of the water supply. Otherwise, longer supply hoses must be obtained. Both hot and cold water must be connected to the Columbus Washer. Be sure to connect each water supply according to its corresponding water temperature or the washer will not operate properly.

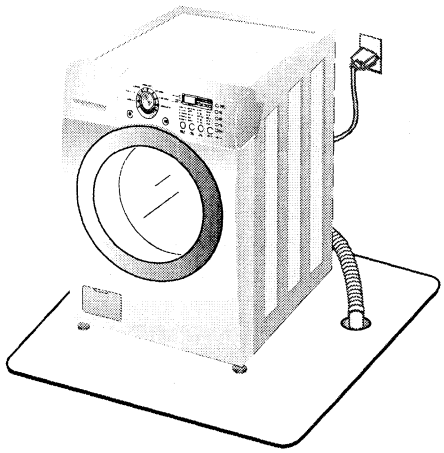
The water supply hoses must be normally threaded. Tighten in a clockwise direction both at the tap and the inlet valves. Sealing washers are included for the provided hoses. The inlet valve threading is plastic. Do not strip, cross-thread, or overtighten when connecting the inlet hose to the valve.

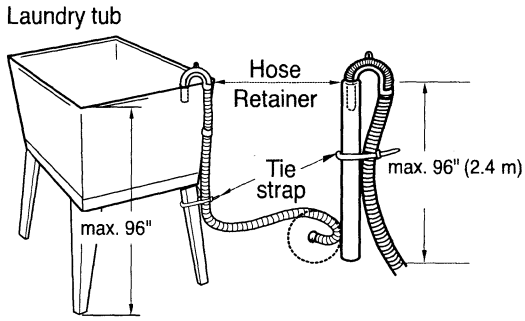


Be sure to test the seal of the hoses after they have been attached. To do this, turn on the supply taps completely and examine the connections for leaks. Also, make certain that there are no bends in the hose. When servicing a washer, it is always advisable to check the condition of the water supply hoses. If hoses show signs of damage or decay, they should be replaced.

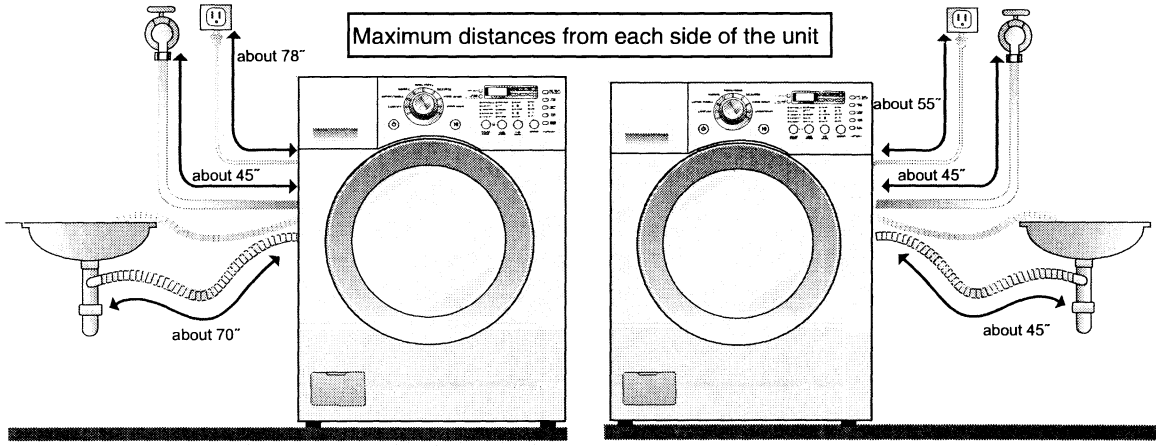
INSTALLING THE DRAIN HOSE

The drain hose may be connected to a number of possible drain systems, namely, a laundry tub, a sink or its drain pipe, or a floor drain. Do not submerge the end of the hose, an air gap should always be present.





When using a laundry tub, remember that the drain hose may not extend higher than 96 inches above the bottom of the washer, though this circumstance should be rare. A hose retainer is provided for such an arrangement. If a sink or a drain pipe is to be used, be mindful that the length of the drain hose does not exceed 41 inches. The washer should be closer than this distance, anyway, to reduce tension on the hose. The end of the drain hose used with the sink should not be lower than 23 inches nor higher than 40 inches from the floor.



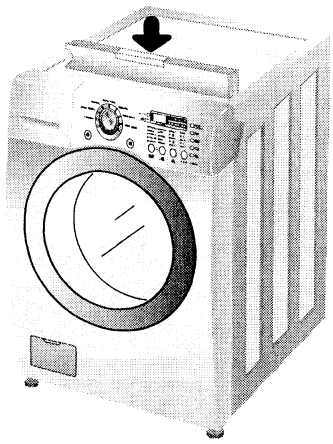
A drain hose connected to a floor drain is acceptable. However, as with any of the connections listed, be sure that the drain hose is securely held in position. The drain pump on the Columbus Washer is fairly powerful, so securing the hose is quite important in order to prevent water damage.

Finally, be sure that the hose is not pinched nor twisted. The free flow of drain water through the hose is important for the life of the washer as well as for preventing water damage to the user's property.

LEVELING THE UNIT

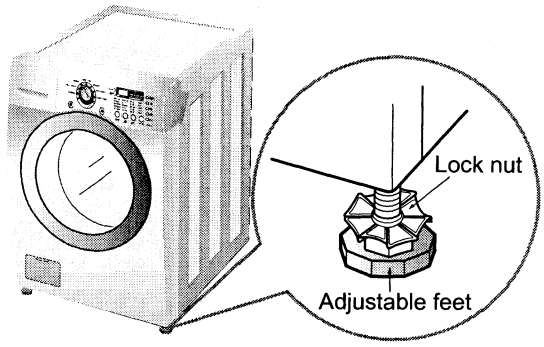
Leveling the washer is important for the sake of the machine as well as the customer. In addition to being an irritant, the displacement, noise, and vibration that result from improper leveling can shorten the life of the machine.

Be sure to test the level both across the width of the top plate and vertically along the front panel. With respect to the operator's point of view, the top plate level indicates the washing machine's tilt clockwise or counterclockwise, while the front panel level shows the tilt toward or away from the operator.

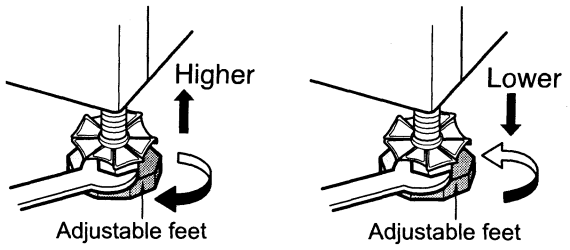


If the machine needs to be leveled, the installer should rotate the adjustable feet as necessary. The feet are threaded normally, so, looking down on one of them, the installer should rotate the foot clockwise to raise the corresponding side of the unit.

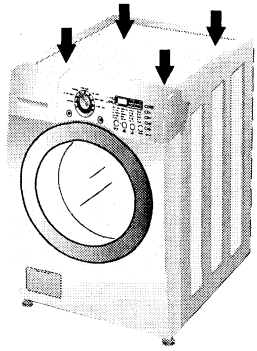
Assuming that the unit does not rock when it is initially placed in its location, the feet should most likely be adjusted two at a time depending on the direction that the unit needs the most tilt adjustment. For example, if the unit should be tilted clockwise, the feet on the left side of the washer need to be raised. Alternatively, the feet on the right side of the washer may be lowered. If both sides have been so adjusted and the unit still needs more clockwise tilt, the floor is not sufficiently level for this washer.



After, the unit has been leveled, the installer should test for rocking by pressing down on opposite corners of the top plate. If the unit rocks, move the washer back to a level position, and reposition the foot that is hanging until it makes contact with the floor. If the foot cannot be adjusted to the necessary height, then the other three feet must each be lowered the distance of the gap between the first foot and the floor. Unfortunately, if there is not enough adjustment to do this for any one of the three remaining feet, then the floor is not sufficiently even for the washer.



After the leveling is satisfactorily completed, the unit is ready for operational testing as shown on page W-20.



CONNECTING THE ELECTRICAL SUPPLY

The Columbus Washer requires power from a 120 VAC, 60 Hz power supply. Washers with internal water heaters can require up to between 1,200 and 1,400 Watts. A standard AC outlet should be sufficient for the washer's power requirements. However, it is advisable to use a dedicated AC line for the washer, with no other appliances on the same circuit. The AC line should be grounded in compliance with local wiring codes.

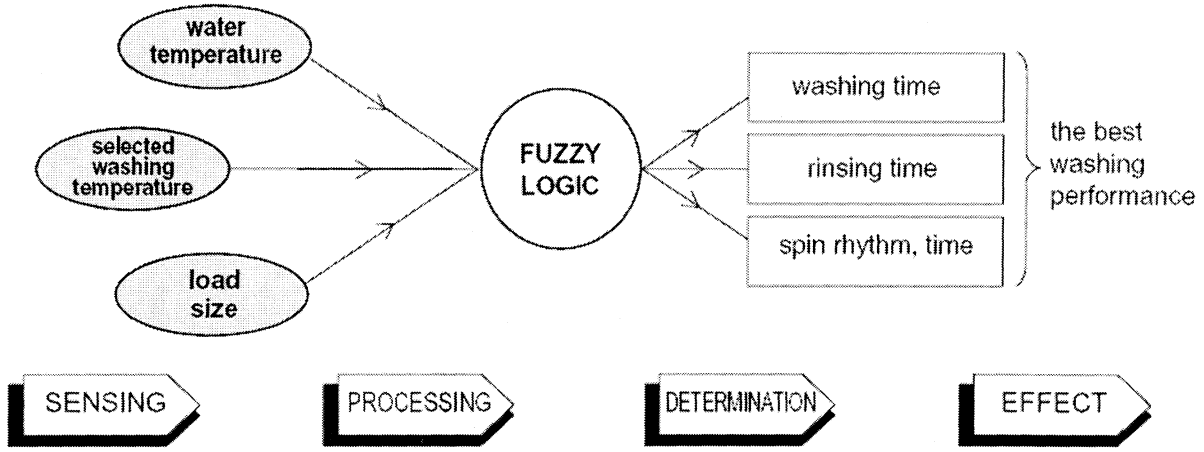
The washer must be positioned so that the AC socket is within easy reach of the unit. The power cord should not have pulling tension in it when connected to the socket, nor should an extension cord be used with the washer. The cord's length is about 40 inches. When servicing the washer, the servicer should inspect the power cord on the washer. If the power cord has been cut, frayed, pinched, or damaged in some other way, the servicer should replace the cord.

OPERATIONAL DESCRIPTIONS

MICROCOMPUTER (MICOM)

The Mayflower Washer models feature full electronic control. This means that there is no mechanical timing or mechanical settings on which the washer must rely to direct its wash cycles.

The electronic programming is frequently referred to as the Fuzzy Logic program by its engineers. This program detects information about the laundry as it is washed in real-time. By using this sensed information in conjunction with the operator's settings, Fuzzy Logic streamlines the washer's functions on a per load basis to optimize washing efficiency and save energy. Thus, Fuzzy Logic provides a dynamic response to the laundry load, rather than a static response to preset estimated conditions.

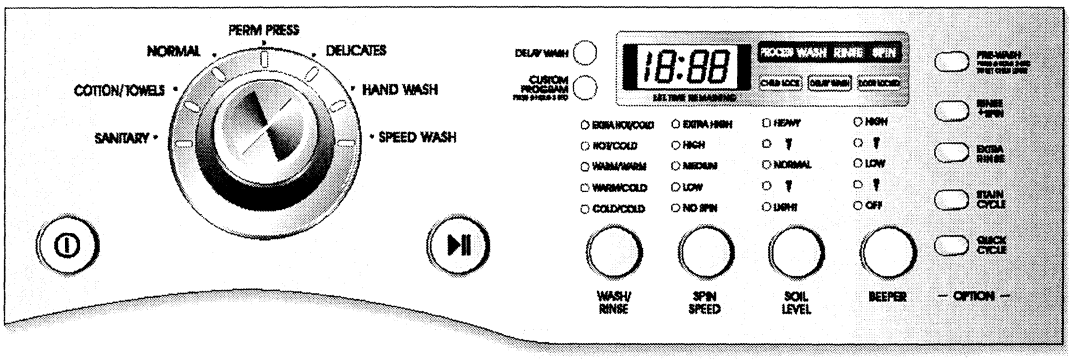


In conjunction with laundry optimization, the microcontroller operates the washer's extra features such as the water circulation system, the detergent/bleach/fabric softener dispenser, and the sanitizing water heater. Naturally, the MICOM also takes operator input and displays operational information through its display and control panel.

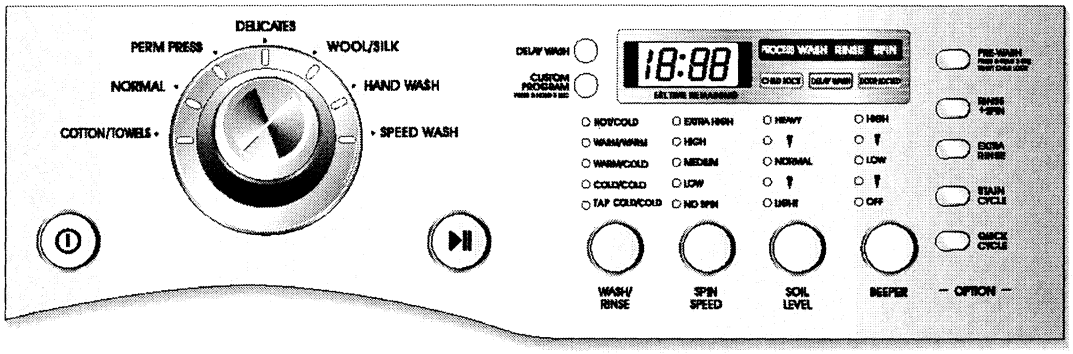
DISPLAY AND CONTROL PANEL

The Mayflower Washer's control panel features simple controls that include buttons and the electronic jog dial. Because these inputs are digitally processed, the panel uses LEDs to display the washing machine's status. This arrangement allows the customer to choose and view such options as the selected cycle, water temperature, and clothing type. Additionally, the operator can see information dealing with estimated time remaining in the cycle, delay time until a laundry load starts, or even diagnostic information.

■ WM2277HW



■ WM2077CW



Above are the control panels for the models in the Mayflower series. Since detailed cycle descriptions are provided both in the owner's and service manuals, this training booklet will highlight only several of the key features of the panel controls.

One feature is the Child Lock option. After setting up and starting a wash cycle, the operator can lock the keyboard to prevent tampering after the load has started. To turn the child lock option on or off, press the PRE-WASH button and hold it for 3 seconds. To turn the child lock option on or off, press the PRE-WASH button and hold it for 3 seconds. The only keyboard button not affected by the Child Lock is the Power button.

In addition to the visual indicators on the panel, an audible beep is usually emitted with each detectect key press. The beep's volume can be set to a higher or a lower volume setting, or it can be turned off.

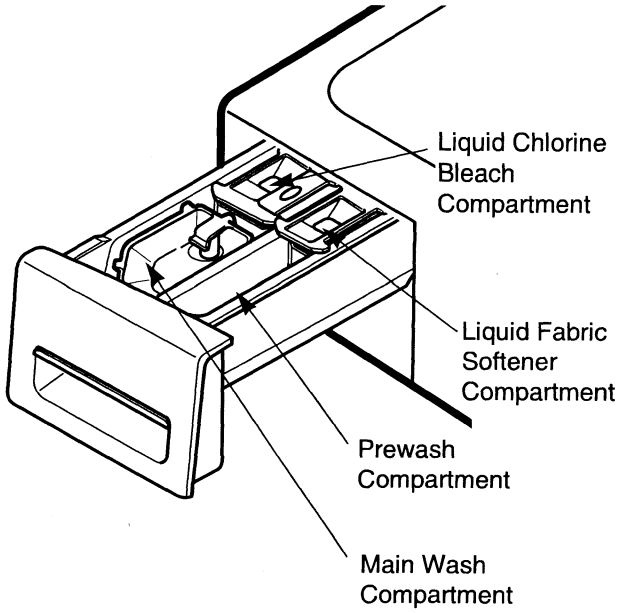
The Columbus washer allows the user to make customized wash settings by way of the panel. If the operator has a setting that will be frequently used, he may store this one setup by use of the Custom Program button. After selecting the desired settings, the user presses and holds the Custom Program button for about 3 seconds. The washer should emit 2 beeps at this time. Then the user may press the Start/Pause button and the custom settings will be stored. To recall these settings in the future, the operator should press the Custom Program button followed by the Start/Pause button.

Another option on the panel may be addressed here. The Delay Wash button allows the user to delay the start of a wash load from 1 up to 12 hours, depending on which model is being used. Pressing the button increases the delay time by 1 hour.

Lastly, pressing the Wash/Rinse button during normal laundry operation will display the current internal temperature in degrees Celsius.

DETERGENT DISPENSER

This multi-chambered section inset into the top plate of the washer provides sections for pre-wash and wash detergents, bleach, and fabric softener. Water should flow through some or all of these at points in the various cycles. The several chambers are described below.

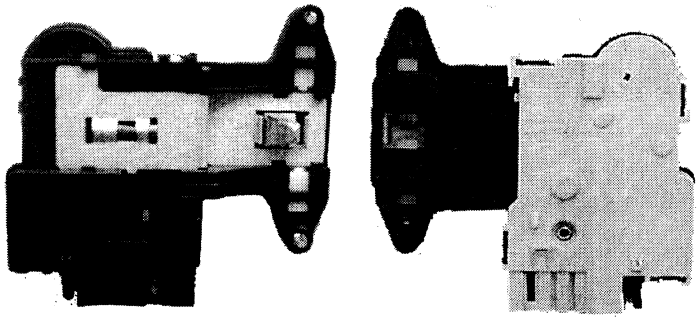


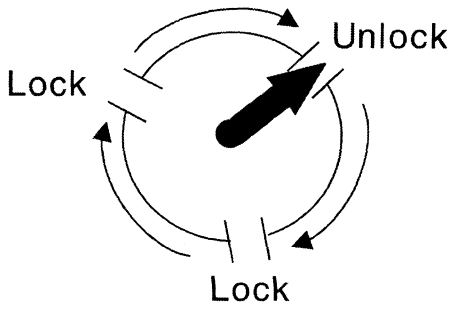
The main wash chamber of the dispenser can use liquid or powdered detergent. If liquid detergent is used, the liquid detergent box must be inserted as shown in the illustration above. Without the insert, liquid detergent will run directly into the drum with the detergent from the prewash dispenser. The pre-wash chamber dispenses detergent, liquid or powder, into the laundry during the pre-wash cycle if selected by the operator. The amount of detergent to be added to this chamber should be one half of that put into the main wash chamber.

Both the bleach and the fabric softener compartments should be filled only with liquids. If bleach or fabric softener contacts the clothing without sufficient water, damage to the clothing may occur. Undilluted bleach in particular can react with the stainless steel drum and cause unusual stains in clothing. These sections are designed to dispense substances using a mixture of water. Bleach is automatically dispensed at the appropriate time during the wash cycle. Fabric softener is released during the last rinse cycle. These compartments may be removed for cleaning should build-up and/or clogging occur. It is a good idea while servicing the washer to verify that this part of the dispenser is not clogged.

DOOR LOCK MECHANISM

The door lock mechanism consists of two parts, a switch with which to detect the latch of a closed door, and a solenoid-controlled actuator that either fastens or releases the door latch. If the mechanism does not detect the presence of the door, it will not allow the washer to start a selected cycle when the Start/Pause button is pressed. Instead, "dE" will flash on the panel display to indicated a door error.



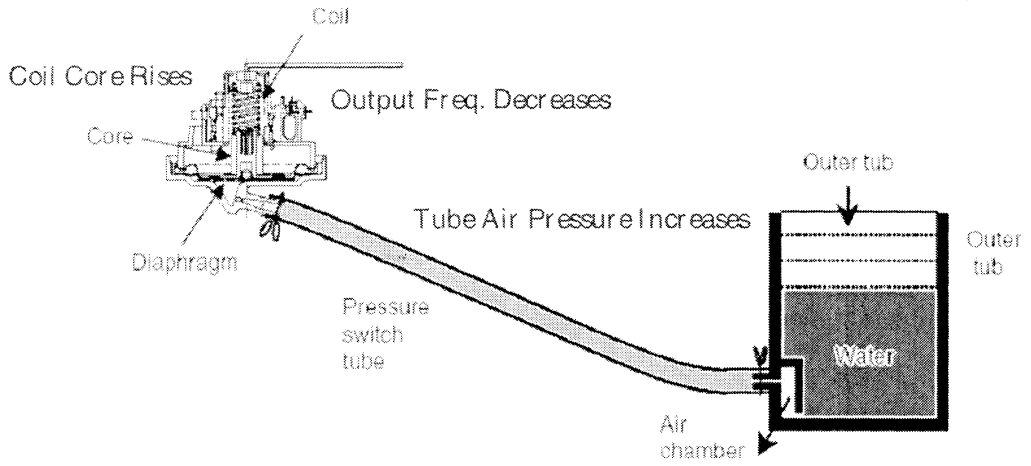


The actuator is properly described as a three-position latching system. When a wash cycle is initiated, the MICOM sends one pulse to lock the door. When the laundry cycle completes or is electronically interrupted, the MICOM sends two pulses to the actuator to unlock the door.

Certain conditions exist that would prevent the door from being unlocked when the laundry cycle is interrupted. In the event of a power failure, for example, the lock will be maintained for about 5 minutes. In other, more common operating circumstances, the door will remain locked if the drum is moving, the water temperature exceeds 113 °F / 45 °C, or the MICOM detects the water level to be above a certain height. Be aware that the door is designed to pull open (or push open from the inside) with only pressure when unlocked. This is a safety feature that works as long as the actuator has not fastened the latch. Before operating the washer, the operator should, however, check to be sure that no pets or small children have entered the drum. The door cannot be opened from the inside once a wash cycle has started.

WATER LEVEL DETECTOR

The MICOM makes use of a water level detector to monitor the laundry load. Rather than using water pressure, however, the sensor is driven by air pressure in a chamber on the drum. The air pressure changes in relation to the height of the water, moving a diaphragm in the sensor.

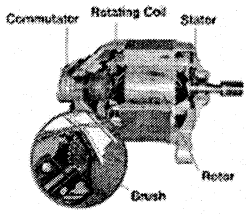


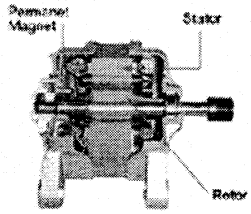
This sensor's electronic operation is based on the displacement of the coil attached to the diaphragm. As this coil raises or lowers, it changes the electronically resonant characteristics of the oscillator circuit that it composes. The result of this is that the water level is measured by the MICOM in terms of its frequency. More specifically, frequency increases as the water level decreases. A typical frequency reading when the water is at a low level might be nearly 25.5 kHz, while the reading at a high level might be about 21.4 kHz. These are reasonable approximations. Individual washers will probably vary slightly. This frequency can be displayed during regular operation of the water by pressing simultaneously the Spin Speed and Soil Level buttons. The displayed number should be multiplied by 0.1 to obtain the level frequency in kHz units. For example, 25.5 kHz would be displayed as "255". The MICOM will interpret the frequency as representative of one of eight water level ranges, level 1 being the lowest water level, and anything exceeding level 8 being understood as an overflow condition.

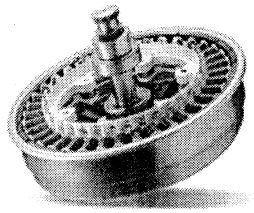
DIRECT DRIVE MOTOR

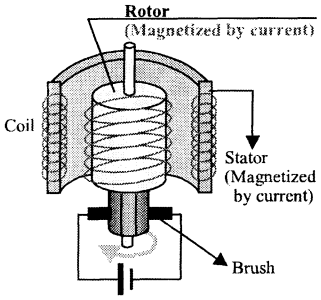
As mentioned in the features section, the Direct Drive motor is an advanced, brushless motor that serves the Columbus Washer without the need for a belt or a pulley. Such a system is not only more

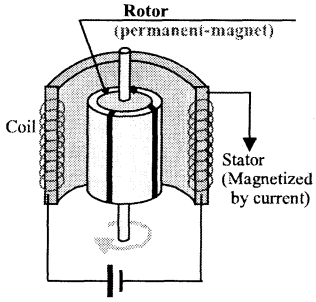
reliable, but also serves with less noise and vibration and greater efficiency in the use of energy.

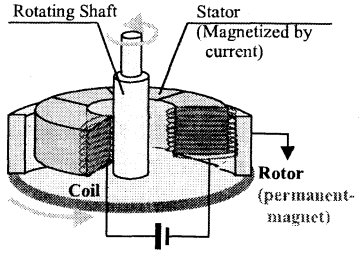






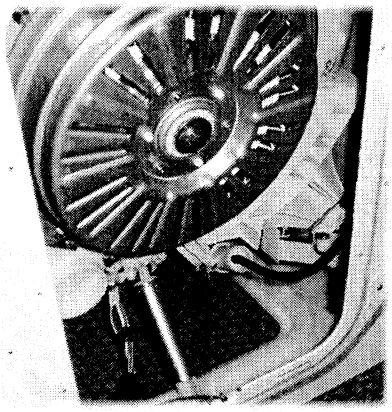






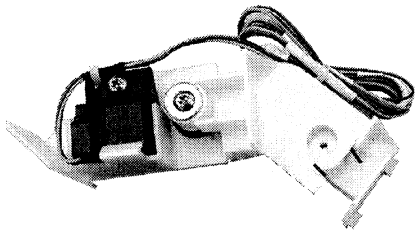
AC Motor | Brushless DC Motor | Direct Drive Motor

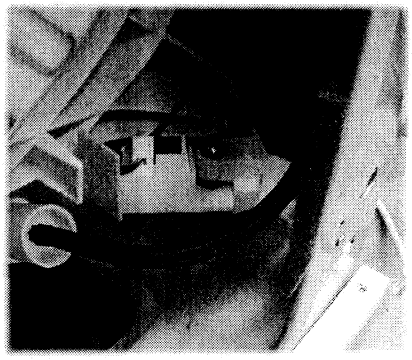
Like a brushless motor, the Direct Drive motor takes advantage of direct current to rotate. Additionally, the rotor is composed of permanent magnets on both types. The advantage of this arrangement over the AC motor's brushes is well known. Unlike a more traditional brushless motor, however, the Direct Drive's rotor circumscribes the stator rather than sits in it. Because of its size and power, the Direct Drive motor can do the job that used to require a belt and pulley. A Hall sensor is used to feedback the motor's speed to the MICOM.



BALL SENSOR

In order to reduce incidents of washer imbalance, prevent the washer from walking, and preserve the washer's life, the unit is equipped with a ball sensor. As the drum rotates, the distribution of the clothing may cause it to shake. Higher rotation speeds tend to exaggerate this shaking so that, barring intervention of some kind, the entire unit would begin to vibrate and make excessive noise.

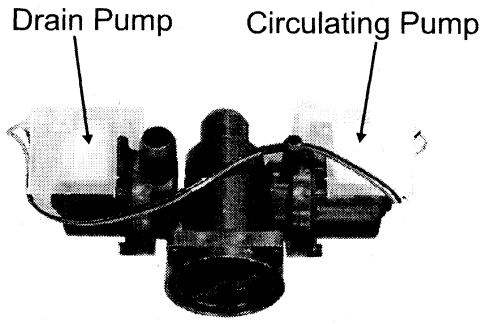




The ball sensor takes advantage of any low amplitude shake that may be present when the drum begins to rotate, well before it might cause the unit to move out of its position. If the drum's displacement during an oscillation is high enough, a small foot on the drum will bump the ball sensor. Inside, the ball rests over a hole that would otherwise receive emitted light. If the ball moves from this hole, the light signal would trigger the MICOM to stop the drum from its regular rotation. The MICOM would direct the drum to begin rotating and counter-rotating to balance its load. Once this is accomplished, the regular drum rotation may be resumed.

CIRCULATION PUMP

Many of the Columbus Washers feature water circulation. This serves to make the laundry cycle more effective by repeatedly showering the detergent and water onto the clothing, more quickly soaking the clothing, and reducing the suds which would otherwise occur. Suds are undesirable because of their tendency to suspend impurities on the clothing rather than remove them. The circulation pump is in the same housing as the drain pump, though the two are separate. Water should circulates constantly during the first three minutes of a wash cycle, and should alternate on and off for the next seven minutes of the cycle. The circulation should always be on during the rinse part of the cycle.



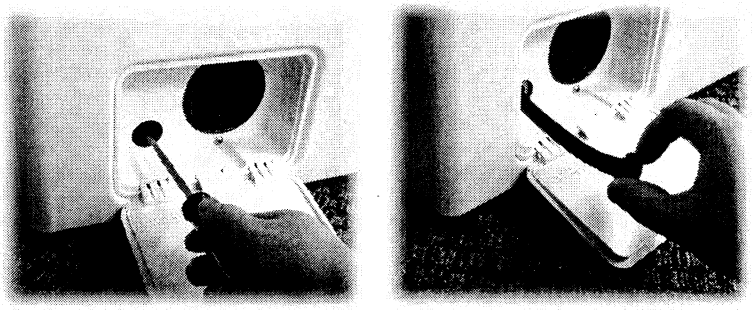
SERVICING

INTRODUCTION

The following sections cover unit troubleshooting. They include information on basic operational testing, a built-in diagnostic mode, error codes, and step-wise solutions to various problems which may arise. As the servicer deals with a variety of problems, he should remember the safety considerations already outlined in this manual. If service to the unit requires any disassembly, the servicer should remember to allow power to the unit only when electrical or electronic testing is necessary. Even when the unit is not in a state of disassembly, be one should especially alert to the dangers posed by an electronic appliance that may not be functioning properly. If there is an operational problem, the servicer should check the integrity of the connections according to the wiring diagrams shown on page W-17 of this manual.

DRAINING WATER

Another consideration in servicing is the fact that the washer retains a small amount of water. The operator or servicer would be likely to discover this fact accidently when removing the water filter. This would not be a problem on a waterproof floor with a nearby drain. However, releasing water in this manner on carpet, wood, and any surface without a drain could present a liabilities in the forms of flooring damage and/or slippery walking conditions around the washer.



Although there may be no need in certain cases to drain the water, there may be other circumstances, such as disassembly, that require the water's removal. In those instances, use a flat-head screwdriver to release the servicing drain located next to the filter. When released, a length of this small hose sufficient to reach a nearby water pan may be pulled from the unit. Be sure to have this water pan ready when removing the plug on the end of the servicing drain.

TEST MODE

To aid the servicer in diagnosing the Mayflower washer's operation, a QC test mode has been incorporated into the unit to allow the servicer to examine the various operations of the washer more specifically. To activate the test mode, make sure the unit's power is turned off but that the power cord is attached to a supply socket. Then press and hold, simultaneously, the Spin Speed and Soil Level buttons. While these are held down, press the power button. If the unit has successfully entered the test mode, it will emit two beeps and most of the LEDs will be lit. Some of the segments on the number display will not light according to the particular model being serviced. Refer to the chart below for related information.

Number of times the Start/Pause button is pressed	Check Point	Display Status
None	Turns on all lamps and locks the door.	18:88 [1)]
1 time	Tumble clockwise.	rpm (40~50)
2 times	Low speed Spin.	rpm
3 times	High speed Spin.	rpm
4 times	Inlet valve for prewash turns on.	Water level frequency (25~65)
5 times	Inlet valve for main wash turns on.	Water level frequency (25~65)
6 times	Inlet valve for hot water turns on.	Water level frequency (25~65)
7 times	Inlet valve for bleach turns on.	Water level frequency (25~65)
8 times	Tumble counterclockwise.	rpm (40~50)
9 times	Heater turns on for 3 sec.	Water temperature
10 times	Circulation pump turns on.	Water level frequency (25~65)
11 times	Drain pump turns on.	Water level frequency (25~65)
12 times	Power off and unlock the door.	Turn off all lamps.

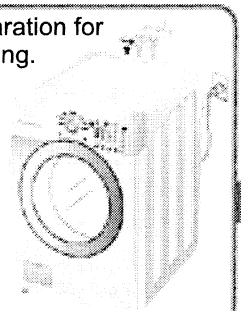
1F:81 : WM2277HW 1F:82 : WM2077CW

TROUBLESHOOTING

BASIC OPERATIONAL TESTING

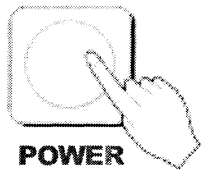
The following procedure is a general method for troubleshooting basic washer operations. By following this chart, the servicer may be able to collect a number of clues that will aid in properly and quickly troubleshooting the root problem. This method should also be used after installation.

1 Preparation for washing.

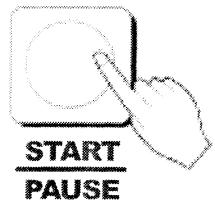


- Unit receiving power?
- Inlet hose connected and no kinks?

2 Press the power button.

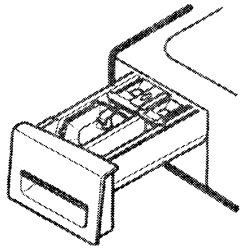


3 Press the Start/Pause button.



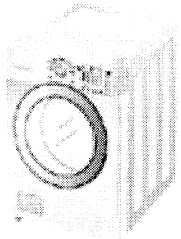
- Did the door lock? (Listen for clicking sound)

4 Check water supply.



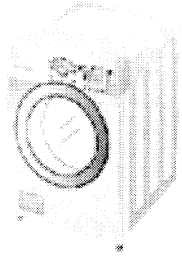
- Is water being supplied to the dispenser.

5 Check the drum's rotation reversal function.



- Does the drum rotate one direction and periodically switch to the other direction?

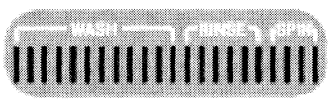
6 Check the water heating function.



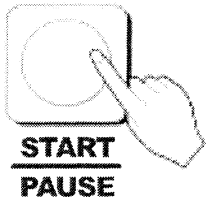
- Set to Press the WASH/RINSE button, does the temperature indicate water is being heated?

7 Check the drain and spin functions.

- Press the POWER button twice to restart.
- Press the SPIN SPEED button.
- Press the START/PAUSE button.
- Do the drain and spin functions work properly?

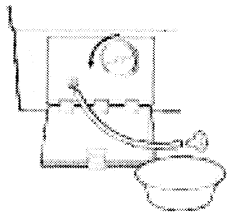


8 Press the START/PAUSE button.



- Did you hear the door unlock?

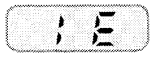
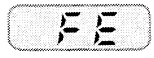
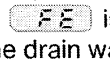
9 Water removal.



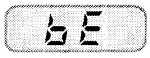
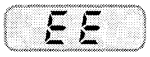
- If service is required, remove the water left in the tub by using the drain hose.

ERROR CODES

The MICOM is programmed to display its interpretation of erroneous operating conditions by using error codes. These codes provide the servicer a strong indication of where to focus the troubleshooting. If an error occurs, eventually the wash cycle will cease, the power will turn off, and the error code will blink. The "FE" error is one exception to this rule, because power must be maintained in order for the drain pump to remedy the indicated overflow condition. Most other errors will deactivate the unit within 4 minutes of their detection if they fail to be addressed. The "PE", "tE", and "dE" errors will deactivate the unit within 20 seconds of their detection if they are not resolved.

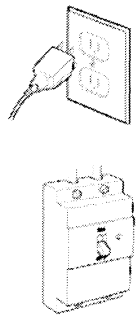
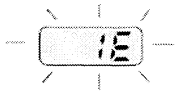
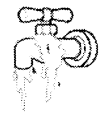
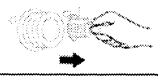
	ERROR	SYMPTOM	CAUSE
1	WATER INLET ERROR		• Correct water level (level 2) is not reached within 8 minutes after water is supplied or it does not reach the preset water level within 25 minutes.
2	IMBALANCE ERROR		• The load is too small. • The appliance is tilted. • Laundry is gathered to one side. • Non-distributable items are in the drum.
3	DRAIN ERROR		• Not fully drained within 10 minutes.
4	OVER FLOW ERROR		• Water is overflowing (over level 8). * If  is displayed, the drain pump will operate to the drain water automatically.
5	PRESSURE SENSOR ERROR		• The SENSOR SWITCH ASSEMBLY is out of order.
6	DOOR OPEN ERROR		• Door not all the way closed. • Loose electrical connections at Door switch or PWB Assembly. • The DOOR SWITCH ASSEMBLY is out of order.
7	HEATING ERROR		• The THERMISTOR is out order.

ERROR CODES CONTINUED...

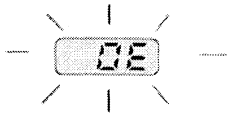
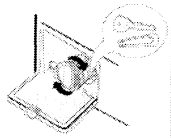
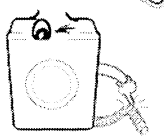
	ERROR	SYMPTOM	CAUSE
8	OVER CURRENT ERROR		• MAIN PWB ASSEMBLY is out of order. • Winding in the STATOR ASSEMBLY is short-circuited.
9	LOCKED MOTOR ERROR		• The connector (3-pin, male, white) in the MOTOR HARNESS is not properly joined to the connector (3-pin, female, white) of STATOR ASSEMBLY. • The electric contact between the connectors (3-pin, male, white) in the MOTOR HARNESS and 4-pin, female, white connector in the MAIN PWB ASSEMBLY is bad or unstable. • The MOTOR HARNESS between the STATOR ASSEMBLY and MAIN PWB ASSEMBLY is cut (open circuit). • The hall sensor is out of order/defective.
10	BALL SENSOR ERROR		• Loose Ball Sensor Connector. • Ball Sensor is out of order. * Displayed only when the START / PAUSE button is first pressed in the QC Test Mode.
11	EEPROM ERROR		• EEPROM is out of order. * Displayed only when the START / PAUSE button is first pressed in the QC Test Mode.
12	POWER FAILURE		• The washer experienced a power failure.

The preceeding error code list may also be used to determine whether a service call is necessary. The basic error code flowcharts that follow are available to this end, inasmuch as the questions therein may be communicated with the customer and some error code is being displayed on the customer's unit.

ERROR CODES CONTINUED...

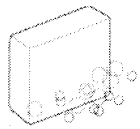
SYMPTOM	GUIDE FOR SERVICE CALL
No power	Is the power plug connected firmly to 120V AC outlet? → YES → Power failure or breaker opened? Is the outlet controlled by a switch? → NO → Visit to service. 
Water inlet trouble 	Is  displayed?  → YES → Is the tap opened?  → YES → Is the tap frozen?  → NO → Is the water supply shut-off?  → NO → Is filter in the inlet valve clogged with foreign material? → YES → Clean the filter of inlet valve  → NO → Visit to service.

ERROR CODES CONTINUED...

SYMPTOM	GUIDE FOR SERVICE CALL
Door error 	Started with door opened? YES →  Close the door.  NO Was the load too large? YES → Avoid overloading. NO Clicking sound is heard once or twice, when the START / PAUSE button is pressed to start the cycle? NO Visit to service. Check if the door switch is OK.
Drain trouble 	Is  displayed?  YES Is the drain pump filter clogged with foreign material such as pins, coins, etc? YES → Clean up the filter.  NO Is the drain hose frozen kinked, or crushed?  NO Visit to service.

ERROR CODES CONTINUED...

SYMPTOM	GUIDE FOR SERVICE CALL
Suds overflow from the appliance. (In this condition, wash and spin do not operate normally)	Is a low-sudsing detergent used? YES Is the proper amount of detergent used as recommended? YES Recommend to reduce the amount of detergent. * This appliance has an automatic suds sensing function which prevents overflow. * When excessive suds are sensed, the suds removing implementations such as drain, water input, pause will operate, without rotating the drum.
No softening effect	Is softener put in the correct compartment of the dispenser? YES Is the softener cap clogged? YES Explain proper use of softener. **Clean the softener compartment**
FE PE CE tE LE	Visit to service.

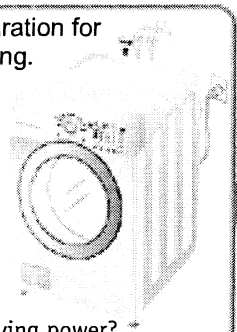


LOW-SUDSING

DIAGNOSIS OF COMMON PROBLEMS

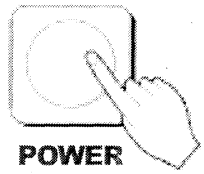
Should a service visit be necessary, the following flowcharts provide a basic course of action for investigating some historically common problems in washing machines. As always, be careful to avoid electric shock and, if disassembly is necessary, be sure to reconnect wire terminals according to the appropriate wiring diagrams.

1 Preparation for washing.

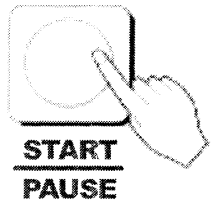


- Unit receiving power?
- Inlet hose connected and no kinks?

2 Press the power button.

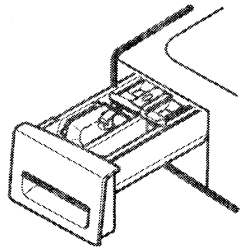


3 Press the Start/Pause button.



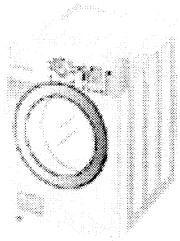
- Did the door lock? (Listen for clicking sound)

4 Check water supply.



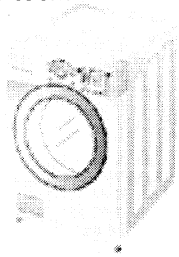
- Is water being supplied to the dispenser.

5 Check the drum's rotation reversal function.



- Does the drum rotate one direction and periodically switch to the other direction?

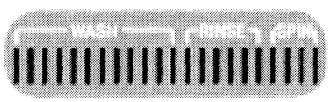
6 Check the water heating function.



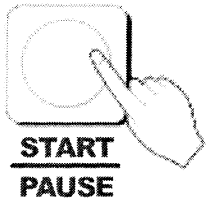
- Set to Press the WASH/RINSE button, does the temperature indicate water is being heated?

7 Check the drain and spin functions.

- Press the POWER button twice to restart.
- Press the SPIN SPEED button.
- Press the START/PAUSE button.
- Do the drain and spin functions work properly?

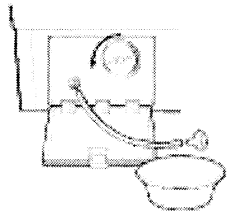


8 Press the START/PAUSE button.



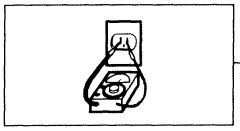
- Did you hear the door unlock?

9 Water removal.



- If service is required, remove the water left in the tub by using the drain hose.

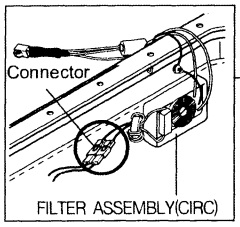
NO POWER



Is the supplied voltage 120V AC?

NO → Check the fuse or reset the circuit breaker.

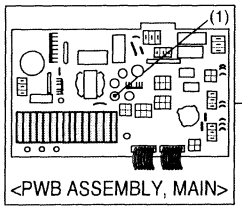
YES



Is the voltage between the 2 FILTER ASSEMBLY connectors 120V AC?

NO → Replace the FILTER ASSEMBLY (CIRC).

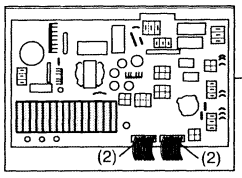
YES



Is the LED(1) on?

NO → Replace MAIN PWB ASSEMBLY.

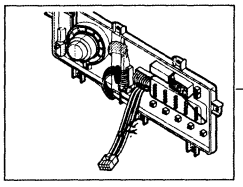
YES



Are the connectors(2) on the PWB loose?

YES → Reconnect.

NO



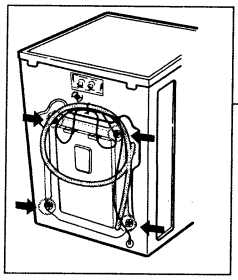
Is wire of the DISPLAY PWB ASSEMBLY broken?

NO → Replace the MAIN PWB ASSEMBLY.

YES

Replace DISPLAY PWB ASSEMBLY or repair wire.

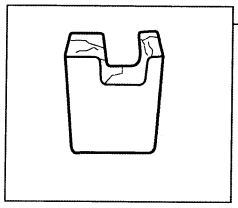
VIBRATION & SPIN NOISE



Have all the transit bolts and base packing been removed?

NO → Remove the transit bolts and Base packing.

YES

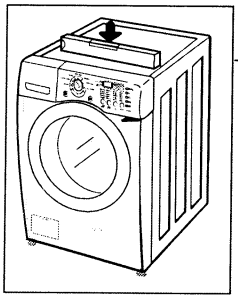


Is the washer installed on a solidly constructed floor?

NO → Move the washer or reinforce the floor.I

YES

Check if the washer is perfectly level as follows:



Check the leveling of the washer with a Level and check that the washer is stable.

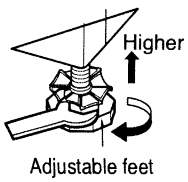
YES

Put an unbalance part (4, rubber) inside of drum and start QC test mode and run in high spin (Refer to section 7-2).
When the machine is spinning in high speed, verify that it is stable.

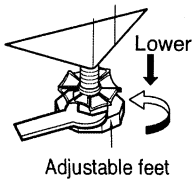
If you do not have the unbalance part, put 4.5 to 6.5 lbs (2 to 3 kg) of clothing. Once loaded, press power, rinse+Spin and the start/pause button in sequence.
When the machine is spinning in high speed, verify that it is stable.

YES

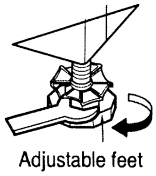
If it is not stable, adjust feet accordingly. After the washer is level, tighten the lock nuts up against of the base of the washer. All lock nuts must be tightened.



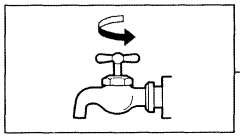
Adjustable feet



Adjustable feet


Adjustable feet

NO WATER SUPPLY

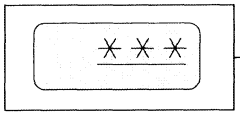


Is water supply shut-off?

NO

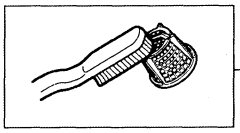
Is the tap opened? — NO → Open the tap.

YES



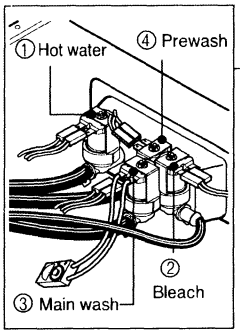
When you press both SPIN SPEED button and SOIL LEVEL button simultaneously, is the water level frequency below 246? — YES → Check the AIR CHAMBER and the tube (clogged).

NO



Is the inlet valve filter clogged? — YES → Clean the filter.

NO

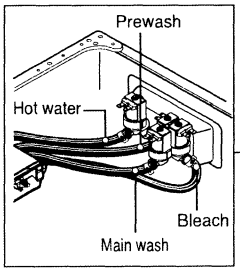


Is resistance between each terminal of INLET VALVE ASSEMBLY 0.8-1.k ? — NO → Replace the INLET VALVE ASSEMBLY.

YES

Verify the voltage of the inlet valve connector is 120V AC. (Refer to 7-2 QC TEST MODE) — NO → Check electrical connection. Replace the MAIN PWB ASSEMBLY.

DETERGENT DOES NOT FLOW IN

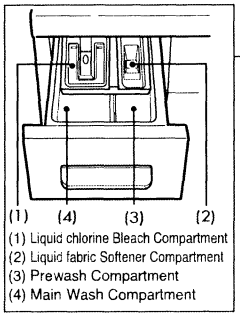


Is water supplied? — NO → Refer to "NO WATER SUPPLY".

YES

Are receptacles correctly connected to the terminals of the INLET VALVE ASSEMBLY? — NO → Check the wiring.

YES



Has detergent been put in the correct compartment of the dispenser? — NO → Put the detergent in the correct place.

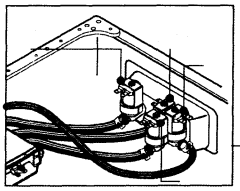
Pre-wash **Main-wash**

● : Detergent

YES

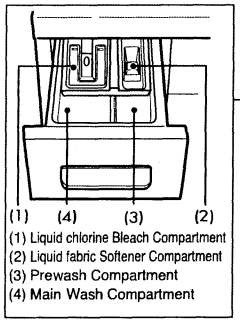
Is the detergent caked or hardened? — YES → Clean the dispenser.

SOFTENE/BLEACH DOES NOT FLOW IN

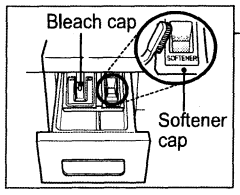


Is water supplied?
NO → Refer to 「NO WATER SUPPLY」
YES ↓

Are the plugs correctly connected to the terminals of the INLET VALVE ASSEMBLY?
NO → Check the wiring on the dispenser.
YES ↓

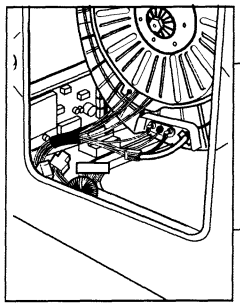


Is softener/ bleach put in the correct compartment of the drawer?
NO → Put it in the correct compartment.
YES ↓



Is the softener/bleach cap clogged?
YES → Clean the Cap and Container.

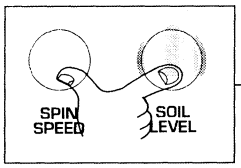
ABNORMAL SOUND



Is the motor bolt loosened?
YES → Secure the bolt.
NO ↓

Is there friction noise coming from the motor?
YES → Replace the STATOR ASSEMBLY or ROTOR ASSEMBLY.

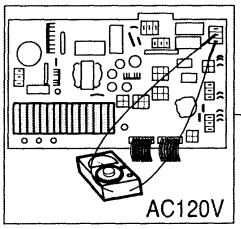
HEATING WITHOUT WATER



When pressing SPIN SPEED and SOIL LEVEL at the same time after draining, is the water level frequency 255?
When pressing SPIN SPEED and SOIL LEVEL buttons at the same time while washing, is the water level frequency between 230 - 243?

NO → Replace the SENSOR SWITCH ASSEMBLY.

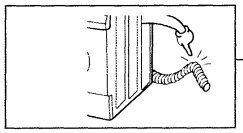
YES ↓



Check the voltage between two pins while pressing the POWER button. Is the voltage 120V AC?

YES → Replace the MAIN PWB ASSEMBLY.

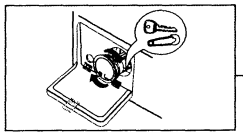
DRAIN MALFUNCTIONING



Is the drain hose twisted or frozen?

YES → Repair the DRAIN HOSE ASSEMBLY.

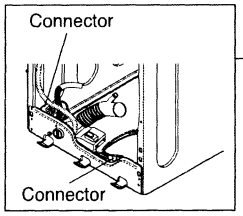
NO ↓



Is the impeller of the drain pump clogged?

YES → Remove foreign material.

NO ↓



Is the connector disconnected, disassembled?

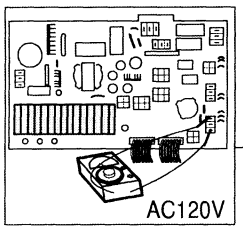
YES → Reconnect or repair the connector

NO ↓

Is the coil of the drain pump too high or low? (resistance of the coil is 10-20Ω)

YES → Replace the DRAIN PUMP ASSEMBLY.

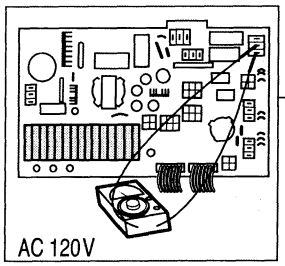
NO ↓



When checking voltage between connectors during spin, is the voltage 120V AC as in the figure?

NO → Replace the MAIN PWB ASSEMBLY.

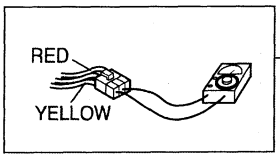
WASH HEATER TROUBLE



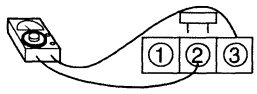
When checking the voltage between connector during whites washing.
Is the voltage 120V AC?

NO → Replace the MAIN PWB ASSEMBLY.

YES ↓

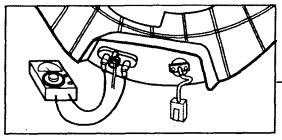


After power off, is the resistance of wire (RED-YELLOW) connectors between 10Ω - 30Ω?



YES → Normal

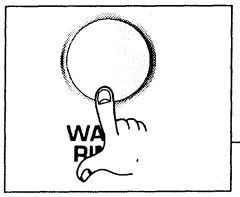
NO ↓



After power off and the heater terminal is disconnected, is the resistance 10-30Ω?

YES → Replace the PWB HARNESS.

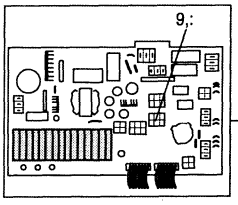
HEATING CONTINUOUSLY ABOVE THE SETTING WATER TEMPERATURE



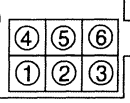
When pressing WASH/RINSE,
is the displayed temperature over 10 °C higher than the selected temperature?
7@
[illegible] : 50 °C
Warm : 40 °C
Cold : 30 °C

NO → Check if inlet hose is connected to a hot faucet ; otherwise, replace MAIN PWB ASSEMBLY.

YES ↓

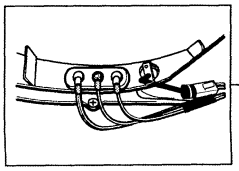


Is the resistance between ② and ③ of Connector (1) 2.5kΩ- 180kΩ ?



NO → Check electrical connection. Replace THERMISTOR.

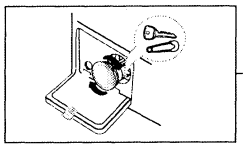
YES ↓



When checking the THERMISTORon the tub, is the THERMISTORloose?

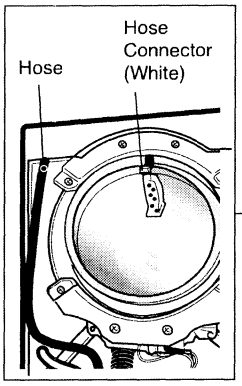
YES → Push theTHERMISTOR tightly to the rubber.

WILL NOT CIRCULATE WATER



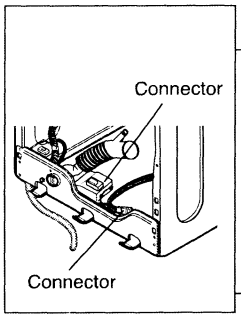
Is the impeller of the drain pump clogged? **YES** → Remove foreign material.

NO



Are the Hose Connector and/or Hose clogged? **YES** → Remove foreign material.

NO

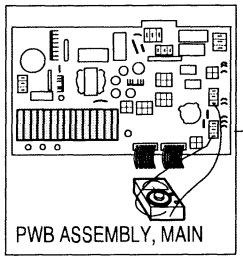


Is the connector disconnected, disassembled? **YES** → Reconnect or repair the connector.

NO

Is the coil of the right side of drain pump open or short circuited? (Coil R is 18-30) **YES** → Replace PUMP MOTOR ASSEMBLY.

NO

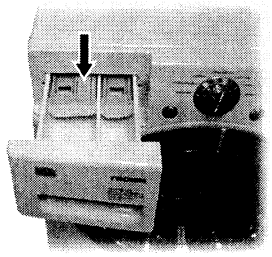
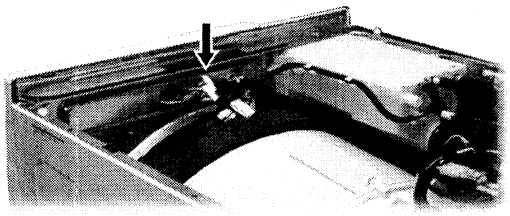
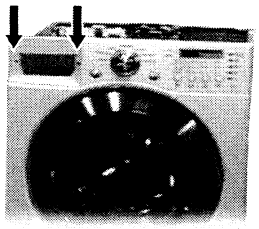


When checking voltage between the connectors during spin, is the voltage 120V AC, as the figure? **NO** → Replace the MAINPWB ASSEMBLY.

DISASSEMBLY

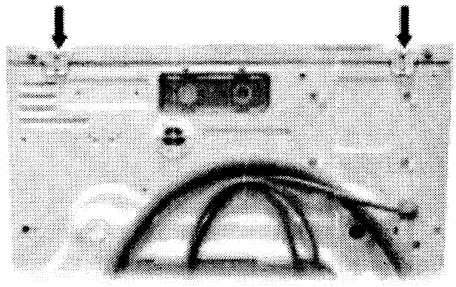
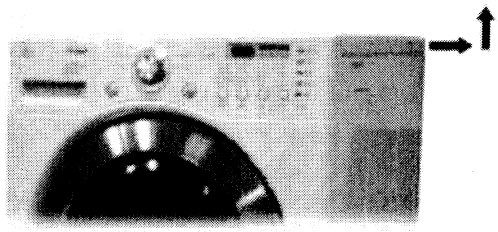
CONTROL PANEL

1) To remove the control panel, first remove the dispenser by pressing down on top of the bleach tray (left picture).
2) Disconnect the control panel wiring (center picture).
3) Remove the two screws, then pull up and forward (starting on the left) to remove the control panel (right picture).
4) When replacing the control panel keep the silver control knob, it will not be included with a new control panel assembly.

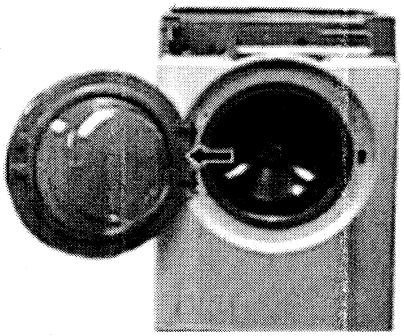
TOP PLATE

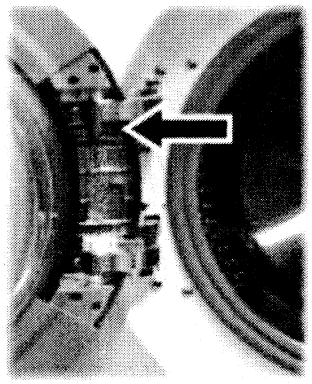
1) To remove the top plate, first remove the 2 screws on the back (left picture).
2) Push the top plate towards the back a few inches, then lift up.

DOOR

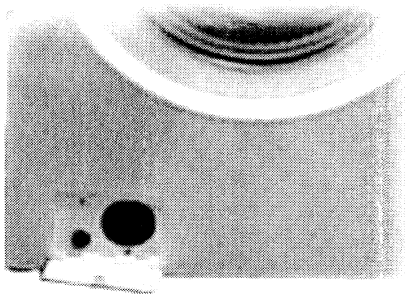
1) The Door does not have to be removed to remove the front panel, but it wil make it easier to remove.
2) To remove the door, remove the 7 screws located near the hinge (left picture).
3) Carefully pry off the hindge cover (left picture).
4) Remove the screws holding the white plastic clips in place (right picture).

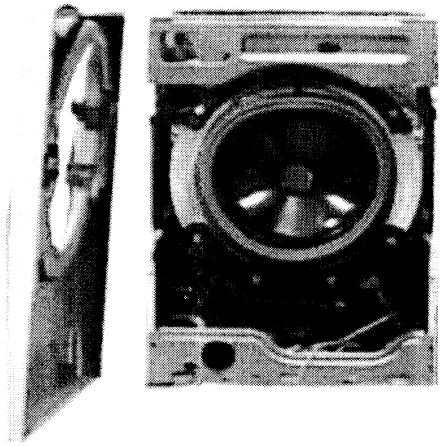




FRONT PANEL

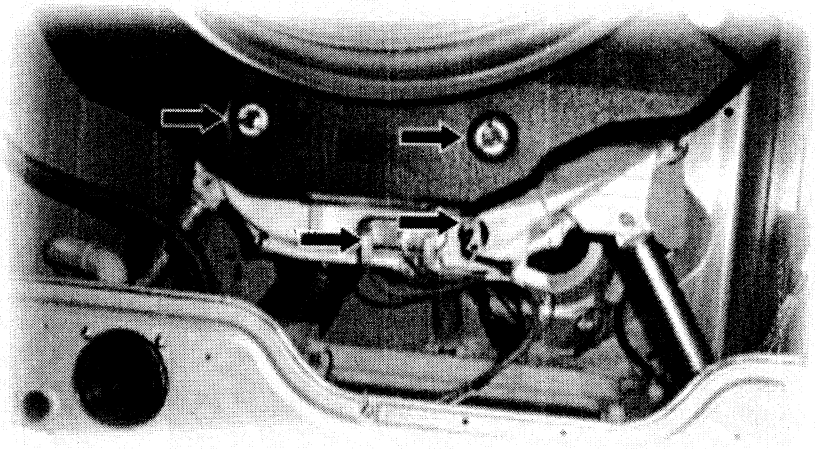
1) The front panel can be removed by first removing the gasket clamp (left picture). The tool used to remove the gasket clamp is available from LG Parts at 1-800-243-0000 (Gasket Clamp Pliers, part number 383EER4001A).
2) Unplug the two door switches (right picture).
3) Open the access panel at the bottom of the unit (lower left picture).
4) Remove the two screws (lower left picture).
5) Gently pry out the access panel.
6) There is another screw to be removed after the access panel is removed.
7) Remove the four screws at the top of the panel.
8) The front panel may now be lifted and separated from the rest of the unit.

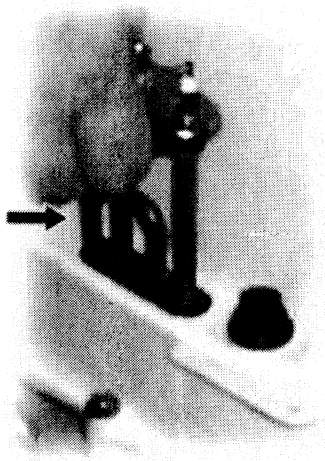




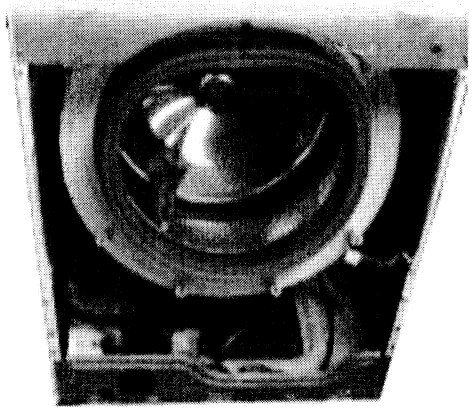
DRUM

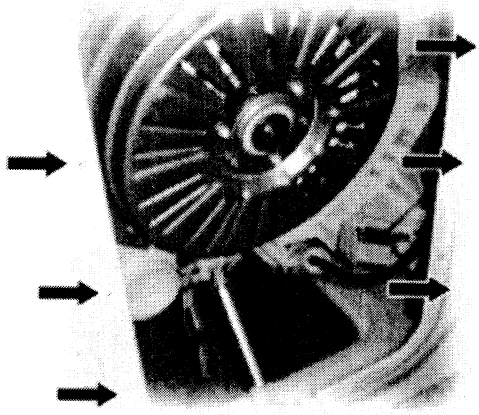
1) Removing the drum is easier if you first remove the counterbalance weights. Each weight has 4 bolts. (Upper right picture)



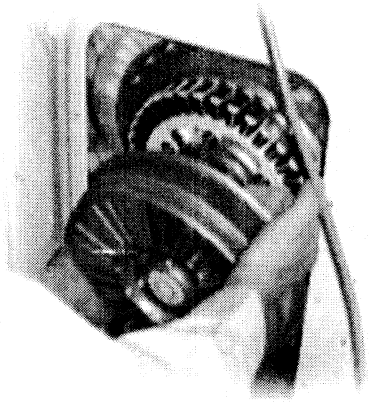


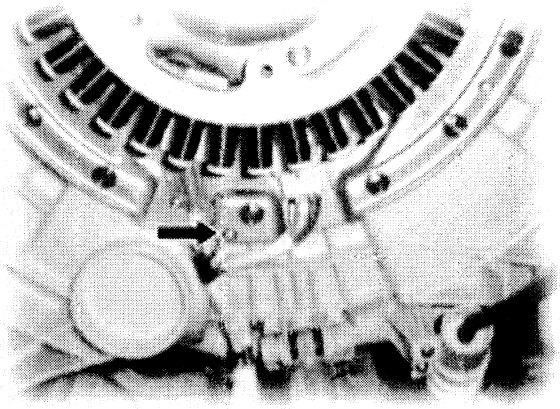
2) Also remove the connectors from the heater and the thermistor. The heater itself may also be removed. Loosening the center nut allows the rubber seal to contract and release the pressure which retains the heater. (Upper left picture)
3) Once the items on the front of the drum are removed, the rear of the drum assembly must be addressed. The back panel may be taken out by removing the 6 screws which fasten it to the frame. (Lower right picture)



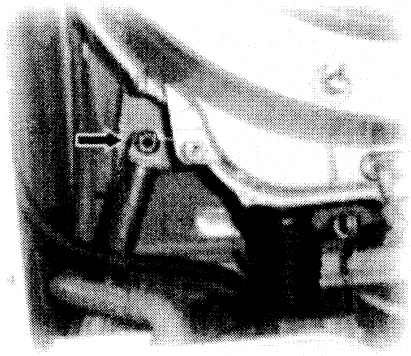


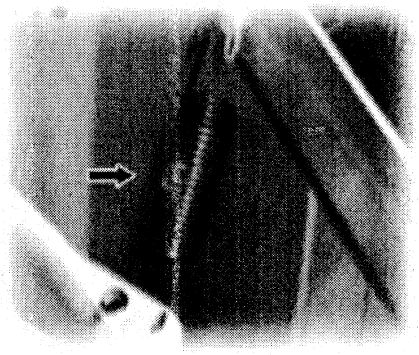
4) Disassemble the motor by first removing the outer motor casing. Use caution as this piece houses the motor's permanent magnets. Remove the large bolt located on the center of the casing. (Upper left picture)





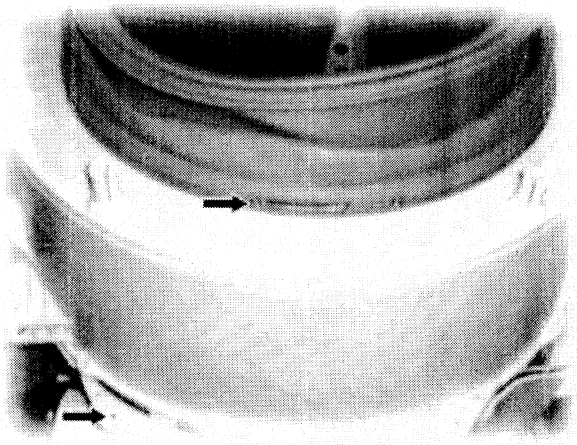
5) Remove the connectors and grounding screw. (Upper right picture)
6) Remove the 5 bolts holding the motor windings in place.
7) Once the motor windings are removed, the only remaining items to hinder the drum's removal are the internal supports, namely, the dampers and springs. First, remove the three damper hinges that connect the dampers to the drum assembly.
8) The drum assembly may then be lifted off the supporting springs.

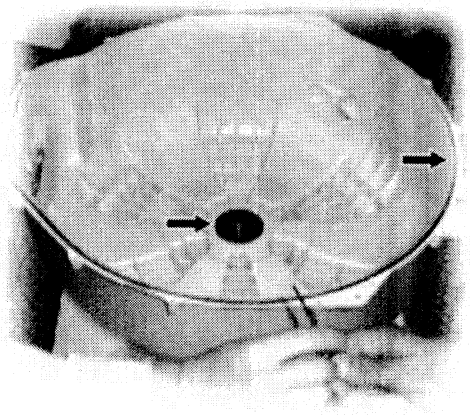


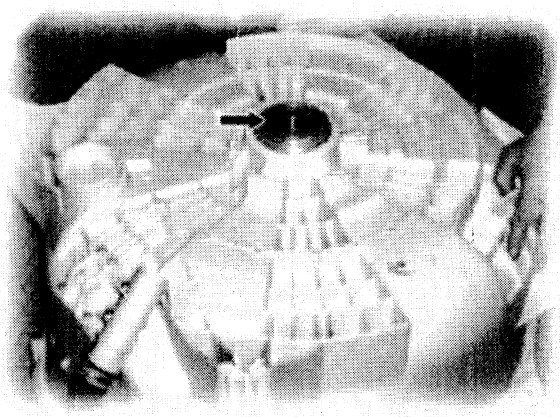


9) The drum assembly consists of inner- and an outer-drum sections. To separate the two, the outer section must be disassembled. The gasket's inner metal ring may be removed. Bolts that fasten the two halves together must be removed.

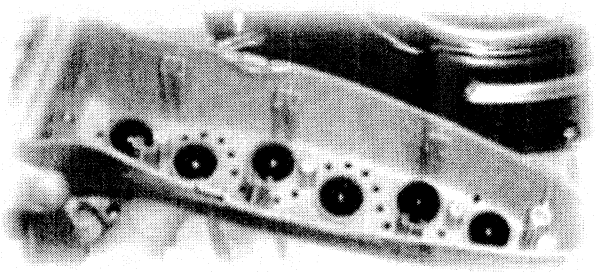
10) Separating the inner-drum from the rear portion of the outer-drum will reveal the bearings, as well as a sealing gasket. Unless this gasket needs to be replaced, it should be left undisturbed within its groove as it is difficult to properly insert.

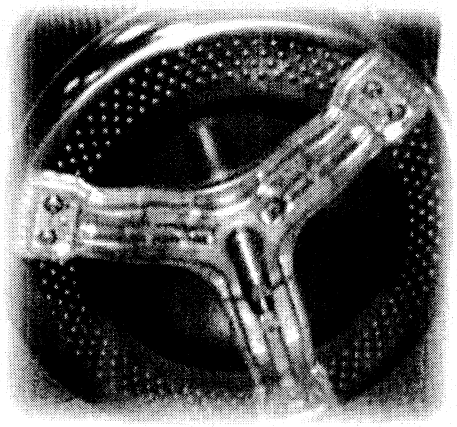






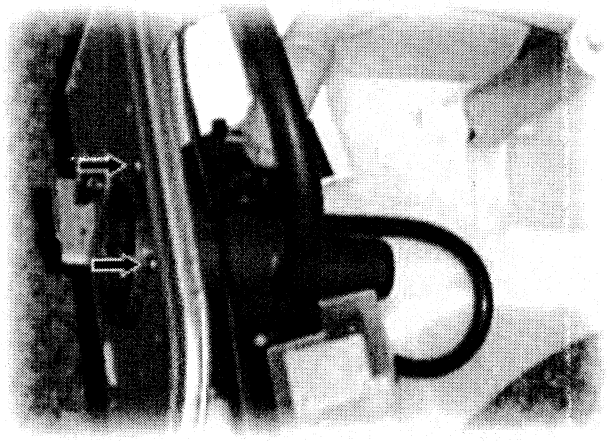
11) If the roller jets should need to be removed for service, remove the two screws on the rear and the one screw on the side of the inner-drum.

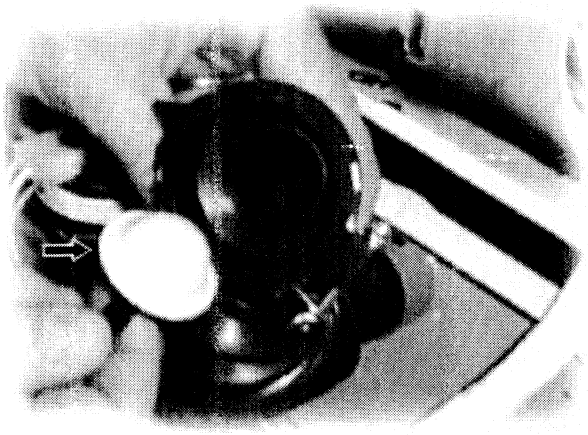


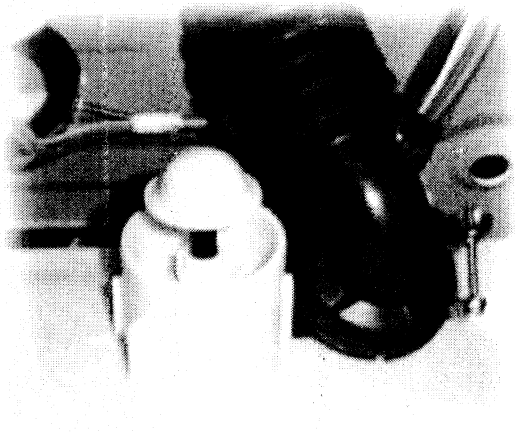


DRAIN/CIRCULATION PUMP

1) Before removing the pump, detach the circulation hose, pump hose, and the bellows.
2) Remove the screws that fasten the pump to the washer's frame.
3) Be careful when removing the drum or drain pipe. A small plastic device is used to regulate water, and can easily be lost.







MAYFLOWER DRYER

OVERVIEW

INTRODUCTION

The 2004 line-up of LG washer and dryers is called the Mayflower line. The 2003 line-up is the Columbus line.

MAYFLOWER WASHER		DLE3777	DLE5977	DLG3788	DLG5988
Color		White	White or Black	White	White or Black
Capacity		7.3 Cubic Feet	7.3 Cubic Feet	7.3 Cubic Feet	7.3 Cubic Feet
Power Required		120/240V 30 Amps	120/240V 30 Amps	Natural Gas/Propane	Natural Gas/Propane
Energy Consumption	Motor	250 W (4.5A)	250 W (4.5A)	250 W (4.5A)	250 W (4.5A)
	Heater	5400 W (22.5 A)	5400 W (22.5 A)	5400 W (22.5 A)	5400 W (22.5 A)
	Lamp	15 W (125mA)	15 W (125mA)	15 W (125mA)	15 W (125mA)
Temperature Settings		5 options	5 options	5 options	5 options
Cycles		9	9	9	9
Size		27" (W), 39" (D) (50" with dooropen), 29 15/16" (H)			
Weight		126 lbs.	126 lbs.	126 lbs.	126 lbs.

OTHER FEATURES

The Mayflower series of dryers provide the features listed above. Additionally, they have other noteworthy aspects Some of each of these are briefly described below.

CHILD LOCK - A key defeat function prevents anyone who does not know how to unlock the keys from changing the settings while the dryer is operating.

RACK DRYING - This feature allows for drying without tumbling. It provides even and efficient heating.

ANTI-BACTERIAL CYCLE - This cycle uses intense heat to neutralize certain types of bacteria.

SENSOR-CONTROL - By use of thermistors and moisture sensors, the main processor (MICOM) monitors and responds to the conditions in the dryer for a more efficient drying cycle.

REVERSIBLE DOOR - The dryer door can be reversed to accommodate more locations for the customer's use.

MODEL IDENTIFICATION

The following table provides a key to recognizing important characteristics of the dryer via it's model number.

Type	Heat	Features	Power	Color
DL: Dryer	G: Gas	37: 7 programs	77: Electric	W: White
	E: Electric	59: 9 programs	88: Gas	B: Black

SAFETY PRECAUTIONS

Servicing a dryer carries potential risks of fire, explosion, property damage, personal injury, and loss of life. To minimize the possibility of these risks, please follow the safety precautions noted in the General Safety Information section. Additionally, please observe the following dryer-specific notices.

GROUNDING INSTRUCTIONS

If, in the course of servicing, grounding wires, screws, straps, clips, nuts, or washers that are used in completing a path to ground are removed, these must be properly fastened to their original position. In the case of both electric and gas dryers, the power cord is equipped with a grounding lead. The power socket to which this cord is attached must be of the appropriate type and must be properly grounded according to local ordinances. Do not attempt to use an extension cord with this dryer. Do not tamper with the power cord.

WORKING WITH GAS

Some of the models described in this manual use liquid natural gas or propane. Hence, precautions to prevent ESD are vital. No servicing should be performed while gas fumes are present around the dryer. If gas is smelled, observe the following points:

- Do not try to light a match, or cigarette, or turn on any gas or electrical appliance.
- Do not touch any electrical switches. Do not use any phone in the building.
- Clear the room, building, or area of all occupants.
- Immediately call your gas supplier from a neighbor's phone. Follow the gas supplier's instructions carefully.
- If you cannot reach your gas supplier, call the fire department.

OTHER SAFETY ISSUES

The servicer should also follow the safety notices listed below:

- Before attempting an installation or any service procedure, read and be very familiar with the dryer's service manual.
- Do not install or store the dryer in a location where it is exposed to the weather.
- Never dry articles of clothing that have been soaked or spotted with flammable liquids. These liquids may include but are not limited to gasoline, kerosene, cleaning solvents, and cooking oil. These can emit explosive vapors or react chemically to cause a fire.
- Never add flammable substances to the dryer. These substances can emit explosive vapors, particularly given the heat that a dryer will normally produce.
- Make sure that the dryer is serviced and used by the customer in a properly ventilated area.
- If the dryer needs to be removed from service, detach the door from the washer to prevent small children from being trapped inside. Also, remove and destroy the unit's power cord.
- At any time that the unit is opened for service, the servicer should take the opportunity to make sure that the inside is free of dust and lint.

INSTALLATION

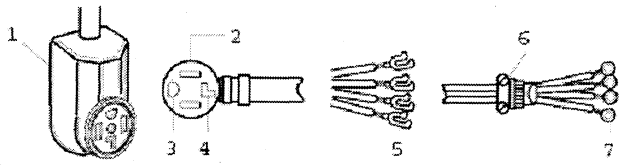
POWER CONNECTIONS

Several variations for electrical connections are possible both for the gas and for the electric dryers. The following instructions outline one 4-wire and two 3-wire connections.

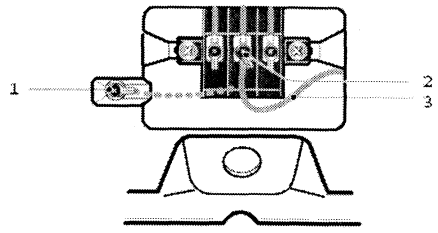
4-WIRE CONNECTION

IMPORTANT: A 4-wire connection is required for mobile homes and where local codes do not permit the use of 3 wire connections.

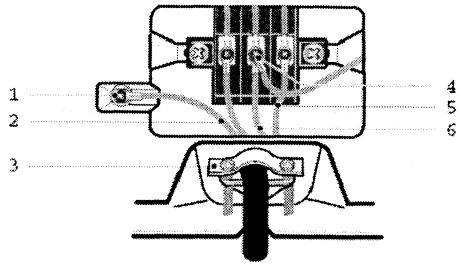
1. 4-wire receptacle (NEMA type 14-30R)
2. 4-prong plug
3. Ground prong
4. Neutral prong
5. Spade terminals with upturned ends
6. 3/4 in. (1.9 cm) UL approved strain reli
7. Ring terminals



1) Remove center terminal block screw.
2) Remove appliance ground wire (green) from external ground connector screw. Fasten it under center, silver colored terminal block screw.
   1. External ground connector - Dotted line shows position of NEUTRAL ground wire before being moved to center terminal block screw
   2. Center silver-colored terminal block screw
   3. Green wire of harness



3) Connect ground wire (green or bare) of power supply cable to external ground conductor screw. Tighten screw.
4) Connect neutral wire (white or center wire) of power supply cord to the center, silver colored terminal screw of the terminal block.
   1. External ground connector
   2. Green or bare copper wire of power supply cord
   3. 3/4 in. (1.9 cm) UL-listed strain relief
   4. Center silver-colored terminal block screw
   5. Neutral grounding wire (green)
   6. Neutral wire (white)

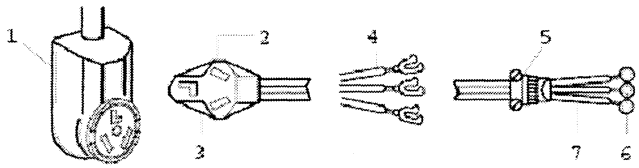


5) Connect the other wires to outer terminal block screws. Tighten screws.
6) Tighten strain relief screws.
7) Insert tab of terminal block cover into slot of dryer rear panel Secure cover with hold-down screw.

3-WIRE CONNECTION

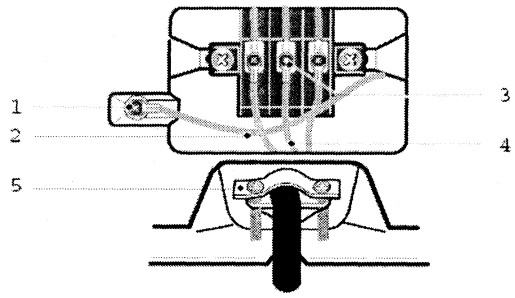
Use where local codes permit, connecting cabinet-ground conductor to neutral wire.

1. 3-wire receptacle (NEMA type 10-30R)
2. 3-wire plug
3. Neutral prong
4. Spade terminals with up turned ends
5. 3/4 in. (1.9 cm) UL approved strain relief
6. Ring terminals
7. Neutral (white or center wire)



1) Loosen or remove center terminal block screw.
2) Connect neutral wire (white or center wire) of power supply cord to the center, silver colored terminal screw of the terminal block. Tighten screw.

1. External ground connector
2. Neutral grounding wire (green)
3. Center silver-colored terminal block screw
4. Neutral wire (white or center wire)
5. 3/4 in. (1.9 cm) UL-listed strain relief

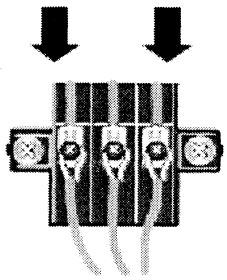


3) Connect the other wires to outer terminal block screws. Tighten screws.
4) Tighten strain relief screws.
5) Insert tab of terminal block cover into slot of dryer rear panel. Secure cover with hold-down screw.

OPTIONAL 3-WIRE CONNECTION

Use where local codes permit, connecting cabinet-ground conductor to neutral wire.

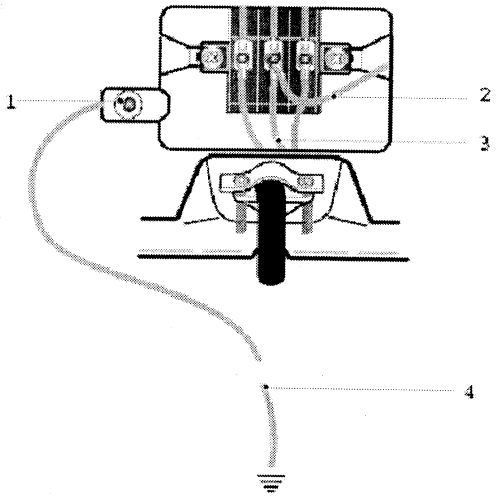
1) Remove center terminal block screw.
2) Remove appliance ground wire (green) from external ground connector screw. Connect appliance ground wire and the neutral wire (white or center wire) of power supply cord/cable under center, silver colored terminal block screw. Tighten screw.
3) Connect the other wires to outer terminal block screws. Tighten screws.
4) Tighten strain relief screws.



5) Insert tab of terminal block cover into slot of dryer rear panel. Secure cover with hold-down screw.

6) Connect a separate copper ground wire from the external ground connector screw to an adequate ground.

1. External ground connector
2. Neutral grounding wire (green)
3. Neutral wire (white or center wire)
4. Grounding path determined by a qualified electrician



GAS CONNECTION

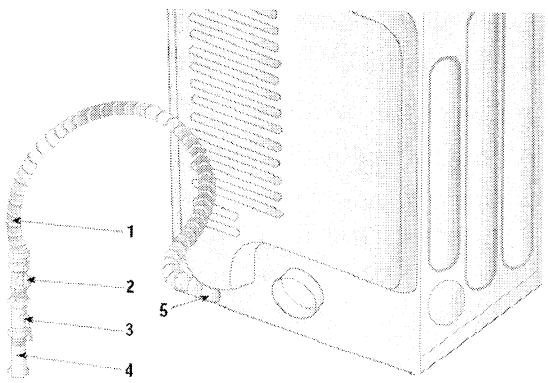
Customers having purchased a new gas dryer may not yet have a gas line in their laundry room. In many localities, installing a gas line requires a permit or other kinds of approval from local authorities. The servicer is responsible to follow all local ordinances involved in the installation of a gas line. If the servicer is not authorized or qualified to install a gas line, properly trained and licensed individuals must perform the installation instead.

To connect the dryer to the gas line, remove the shipping cap from the gas connection at the rear of the dryer. Exercise caution while removing the cap so as not to damage the pipe's threading. Connect the pipe to the gas supply using a new flexible stainless steel connector. Be sure the fuel supply matches the dryer's setup!

Tighten all connections securely. Turn on the gas and check all pipe connections (internal and external) for gas leaks with a non-corrosive leak detection fluid.

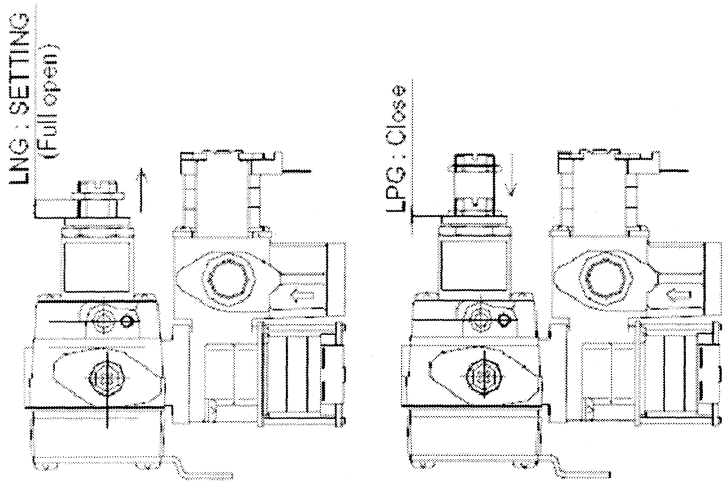
The room in which a gas dryer is to be installed must, obviously, be equipped with either a Natural Gas or a Propane connection. Note that the gas dryer comes from the factory equipped with a 3/8" N.P.T. Natural Gas connection, but can be converted for use with Propane. In many localities, converting the unit must be done by a licensed professional.

1. New Stainless Steel Flexible Connector - Use only if allowed by local codes (Use Design A.G.A. Certified Connector)
2. 1/8" N.P.T. Pipe Plug (for checking inlet gas pressure)
3. Equipment Shut-Off Valve-Installed within 6' (1.8 m) of dryer
4. Black Iron Pipe
   Shorter than 20' (6.1 m) - Use 3/8" pipe
   Longer than 20' (6.1 m) - Use 1/2" pipe
5. 3/8" N.P.T. Gas Connection



This conversion may be done using the following two-step process.

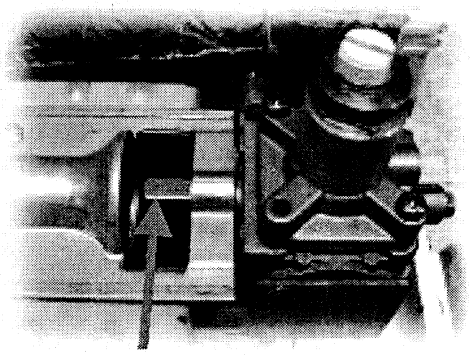
1) Adjust the valve setting. The valve should be fully opened (extended) for use with Natural Gas but closed for use with Propane.



2) Change the orifice. The propane orifice should be available as a service part. It may also be available from the dealer.

Gas Type	Orifice P/N	Marking
Natural Gas	4948EL4001B	NCU
Propane	4948EL4002B	PCU

Make certain the type of gas supply to be used is properly identified! A dryer set up for one type of fuel receiving another type is quite likely to cause a fire or explosion! Once the dryer is properly configured for the gas source, it is ready for the remaining steps of installation.

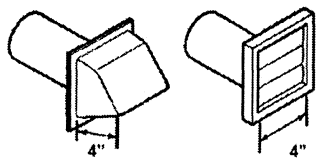
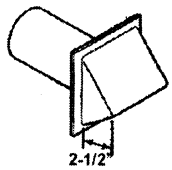


EXHAUST VENTILATION

Select a location that has proper exhaust ventilation. Keep in mind that venting materials are not supplied with the dryer. Exhaust ventilation must conform to all applicable ordinances. Failure to properly ventilate the dryer will void its warranty. Observe the following with regard to duct work:

- Do not use plastic or thin foil duct work.
- Locate the dryer to minimize the length of the duct work. Also, use as few elbows as possible.
- If old ducts are to be used with a new dryer, be certain that the ducts conform to current standards, and make sure that the ducts are clean.
- Use a 4-inch diameter rigid or flexible metal duct. Rigid metal is recommended and may be required by local codes. However, if flexible duct work may be used, it should be shortened to eliminate unnecessary bends. Never install flexible duct in concealed spaces such as a wall or ceiling.

- The male end of each section of duct work must point away from the dryer.
- Although the dryer's exhaust can be channeled through the base of the unit, do not exaust the dryer through the floor of a mobile home.
- Use duct tape on all duct joints.
- Do not use sheet metal screws or other methods of fastening that extend into the duct and may catch lint. Such objects may reduce the efficiency of the exhaust system.
- Duct work passing through unheated areas should be insulated to prevent condensation.
- Refer to the following table for further exhaust duct length and venting considerations.

Number of 90° Elbows	Weather Hood Type	
	Recommended	Use Only for Short Run Installations
		
Maximum length of 4" (10.2 cm) diameter rigid metal duct		
0	65 feet (19.8 m)	55 feet (16.8 m)
1	55 feet (16.8 m)	47 feet (14.3 m)
2	47 feet (14.3 m)	41 feet (12.5 m)
3	36 feet (11.0 m)	30 feet (9.1 m)
4	28 feet (8.5 m)	22 feet (6.7 m)
Maximum length of 4" (10.2 cm) diameter flexible metal duct		
0	45 feet (13.7 m)	35 feet (10.7 m)
1	35 feet (10.7 m)	27 feet (8.2 m)
2	30 feet (9.1 m)	21 feet (6.4 m)
3	25 feet (7.6 m)	17 feet (5.2 m)
4	20 feet (6.1 m)	15 feet (4.5m)
NOTE : Deduct 6 feet (1.8 m) for each additional elbow.		

INSTALLATION

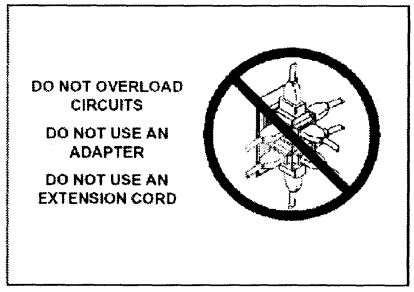
1) Select a location with sufficient space. Naturally, the width and height of the unit must be considered in choosing the proper location. (See specifications provided above.) However, choosing a location with the right depth usually involves the most factors. The dryer's depth is 30 inches. However, there must be a clearance of about 21 inches more for the dryer door to open. Furthermore, a minimum of 5.5 inches should remain behind the dryer to accommodate the dryer's exhaust.

   For closet installation, particularly with a door, ventilation in the door must also be present. The top vent on the door should have at least 48 square inches of ventilation, and the bottom of the door should have a vent of at least 24 square inches. Both vents should be positioned with their respective edges inches from the top and bottom borders of the door. Also, an extra inch of clearance on all sides of the dryer should be available in a closet installation to reduce noise transfer.

2) Select a location with a level floor. The maximum slope under the dryer in any direction should not exceed 1 inch. Otherwise, the dryer may not operate as intended. There are adjustable feet on the dryer that may be used to compensate for excessive slope. Be sure to test for proper leveling after adjusting these feet. Also test the dryer in the same manner as the washer to make certain that all four feet come in contact with the ground.

   Note: in the case of a mobile home gas dryer installation, the dryer must be attached to the floor of the mobile home.

3) Select a location in reach of the correct power supply. There are several possibilities for this supply, depending on the dryer type and the connection used.
   - Electric Dryer, 4-Wire Connection: 120V/240V, 60Hz, Minimum 30-Amp
   - Electric Dryer, 3-Wire Connection: 120V/240V, 60 Hz, Minimum 30-Amp
   - Electric Dryer, 3-Wire Optional Connection: 120V/208V, 60Hz, Minimum 30-Amp
   - Gas Dryer, 3-Prong Grounding Plug: 120V, 60Hz, Minimum 15-Amp



INITIAL TESTING

After the dryer has been connected to its correct power supply, exhaust venting, and, in the case of the gas dryer models, the fuel source, its drum should be wiped clean of dust that may have accumulated during storage and/or shipping. It may then be tested either by performing a regular laundry load, or by using the diagnostic procedure found on page D-11 of this manual.

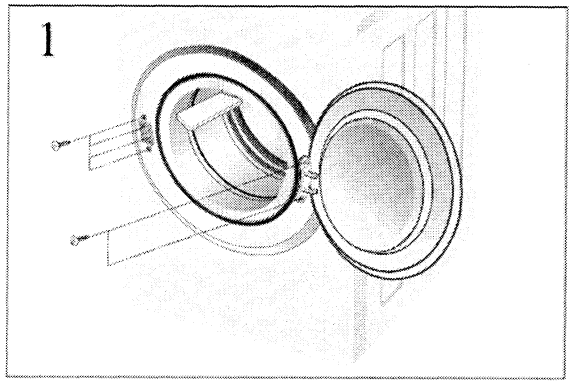
DOOR REVERSAL

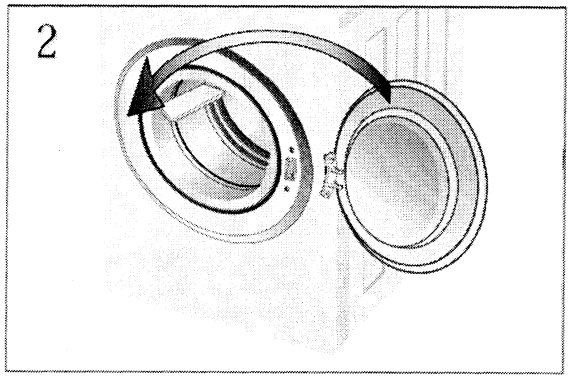
If it is desired, the door may be reversed using a very simple procedure. There is no need to remove the front panel or even to open the top plate in order to reverse the door.

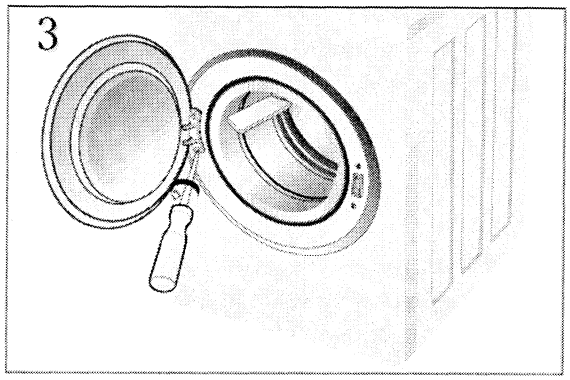
1. Unscrew both the latch assembly and the door hinge from the front panel of the dryer. Note that the door itself is a bit unwieldy as its window is made from glass. Use appropriate caution when removing the door hinge's screws. Also, remove the screws on the side opposite the hinge that are above and below the latch assembly. These screws correspond in position to the screws on the hinge side.

2. Reverse the orientation of both the latch assembly and the door. There is no electronic door lock mechanism, so there are no wires or electrical connections to reposition. All needed spaces and screw-holes are available on mutually opposite sides of the door opening.

3. Tighten the screws on the hinge, latch assembly, and those opposite of the hinge side. Test the door to be sure that it closes properly.







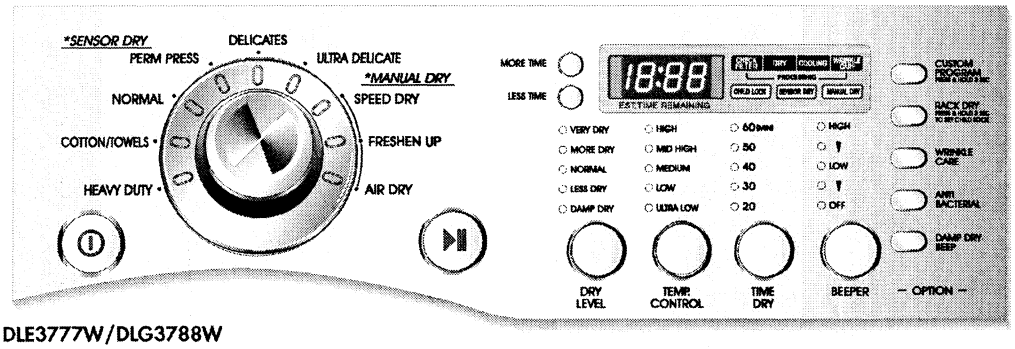
OPERATIONAL DESCRIPTIONS

MICROCONTROLLER (MICOM)

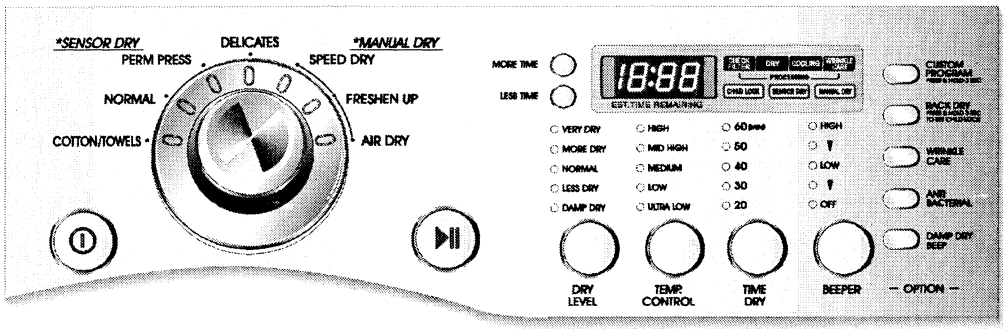
Like the Mayflower Washer, the Mayflower Dryer features fully electronic control. Other devices such as the door switch, the temperature and moisture sensors, and the motor's centrifugal switch all feed information to the MICOM which controls its various drying cycles using this information. This provides improved efficiency in the model's use.

CONTROL PANEL

DLE5977W/DLG5988W/DLE5977B/DLG5988B



DLE3777W/DLG3788W



The Mayflower Dryer's control panel includes a variety of buttons and the electronic jog dial for selecting cycles and starting or pausing the cycle. Since these are all digital controls, the panel also includes an LED display to provide information such as temperature, time remaining, diagnostic information, or moisture readings.

The panels shown are for both the Mayflower I and the Mayflower II dryers. The most apparent difference between these is the placement of the various controls on the units. After this, the jog dial replaces the Start/Pause button on Mayflower II models.

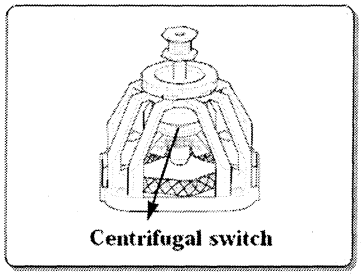
A Child Lock key combination is available on this unit. After setting up and starting a drying cycle, the operator can lock the keyboard to prevent tampering after the load has started. Press and hold the Rack Dry button for 3 seconds until the unit chimes.Only the power button is unaffected by the Child Lock feature.

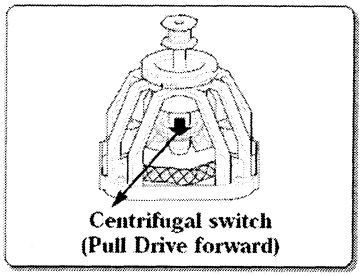
The beeper provides additional feedback to the customer to indicate that a key-press has been detected by the MICOM. This audible signal can be deactivated and its volume can be toggled.

To store a custom drying cycle, the user may take advantage of the Custom Program button. Simply select the desired options for the dryer load and press and hold the Custom Program button. To recall this program at a later time, briefly press the Custom Program button followed by Start/Pause.

DC MOTOR

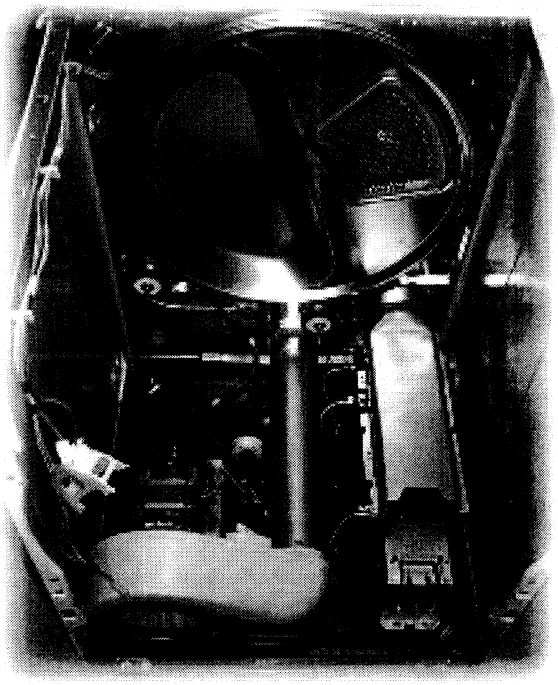
The DC motor used in the Mayflower represents a very common technology found in many appliances. It is a brushless DC motor that boasts long life and low noise. There is a centrifugal switch on this motor that is used to notify the MICOM whether the motor is operating. This is present as a safety feature to prevent activation of the heater in the event that the motor is not functioning.

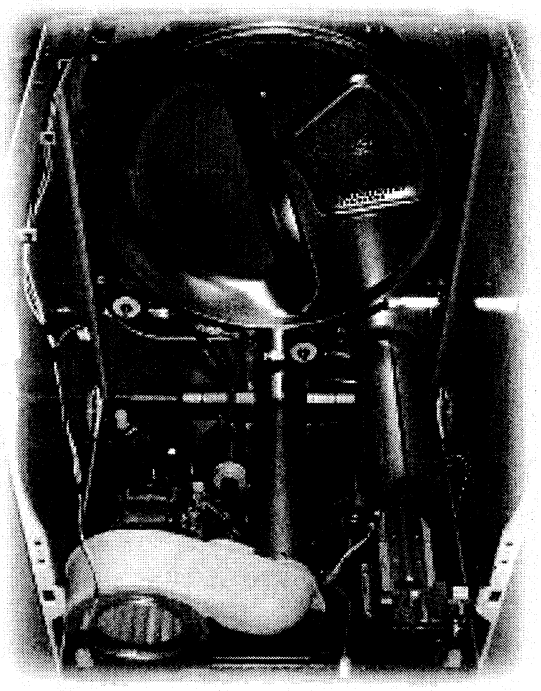




HEATING DEVICE

Internally, the layouts of the gas and electric dryer models are very similar as shown below. The most obvious difference is in the heating unit. Another difference is far less noticeable. The duct assembly, located behind the back piece of the drum, has louvers to the rear on gas models but is enclosed to the rear on electric models. The louvers allow oxygen from the rear of the dryer to be present for igniting and maintaining the flame.

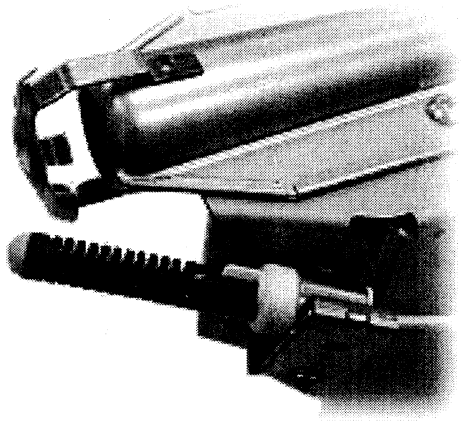




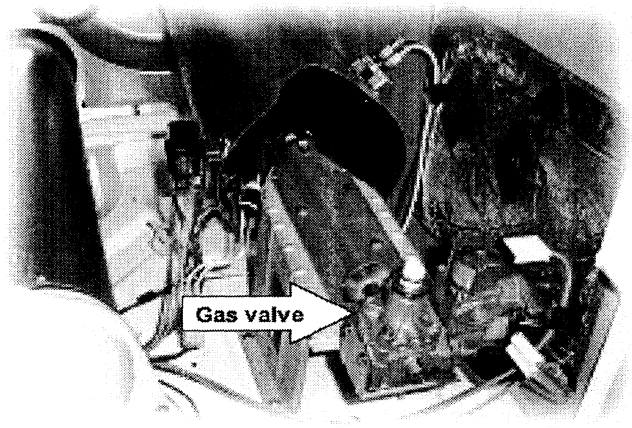
Unlike the electric dryer, the gas dryer's burner housing prevents the dryer's exaust from exiting the unit on its right side. However, both types of models can be exhausted through the bottom as well as the back and left sides.

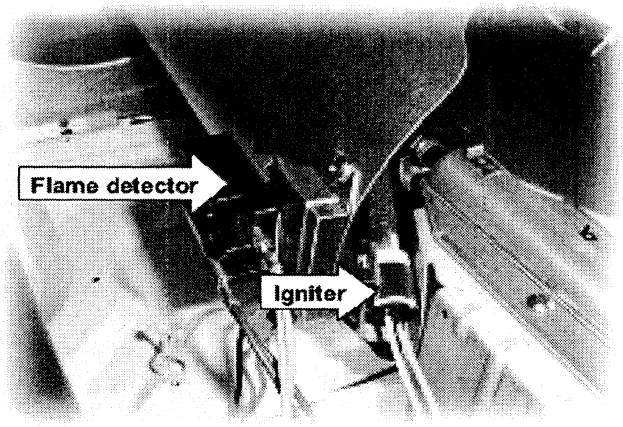
The electric models simply pass electric current into the coils for heating purposes. Temperature information is relayed to the MICOM via thermostats on the heater housings of both types. The gas

unit is more sophisticated in its operation, however. If the motor is functioning properly, the MICOM triggers the heating of a ceramic element attached to the burner housing. This becomes red-hot within several seconds. Upon detecting this, the MICOM opens the gas valve and a flame ignites. A flame detector feeds to the MICOM whether it detects a flame. If no flame is detected, the MICOM will cease the flow of gas to the burner.



Note: the servicer should avoid touching the ceramic element with his skin. Certain oils in the skin cause the ceramic to break down when subjected to intense ignition heat.

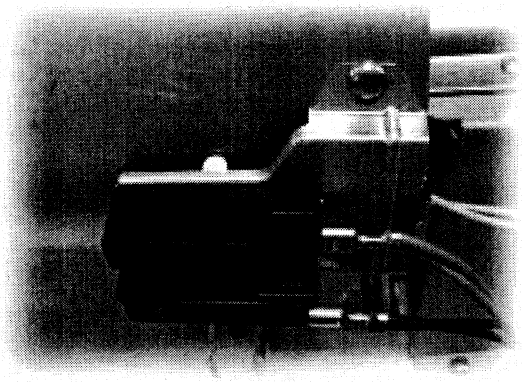




The following outline provides more detailed specifications on the igniter.

1) Steady State Current To Be 2.1 to 3.4 Amps at 80 VAC ± 1 V and 75 °F ± 10 °F Ambient.
   - @ 98 V 2.75 A minimum
   - @ 115 V 3 - 3.6 A
   - @ 132 V 4 A maximum
2) Time to Reach 1,800 °F: 20 to 100 Seconds at 80 VAC ± 1 V and 75 °F ± 10 °F Ambient.
   - @ 98 V 2,100 °F (1,149 °C) minimum
   - @ 115 V 2,450 °F (1,343 °C)
   - @ 132 V 2,800 °F (1,538 °C) maximum
3) Igniter Must Not Exceed 2,800 °F in 10 Seconds at 132 VAC ± 1 V and 75 °F ± 10 °F Ambient.
4) Cold Resistance: 50 to 800 Ohms at 75 °F ± 10 °F Ambient.

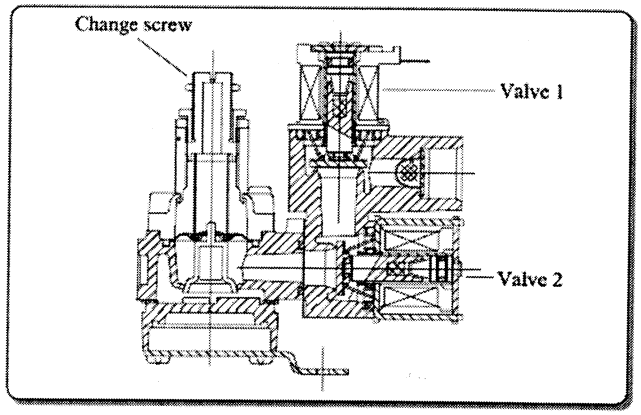
Some specification information is also available for the flame detector.



1) Maximum Bimetal Temp: 375 °F (190.6 °C)
2) Maximum Contact Temp: 325 °F (162.8 °C)
3) Cycles: 100,000
4) Resistive Amperes: 5.75
5) Voltage (AC): 120
6) Agency Recognition: AGA 20 - 3C.001 CGA 1531 - ABI-7210

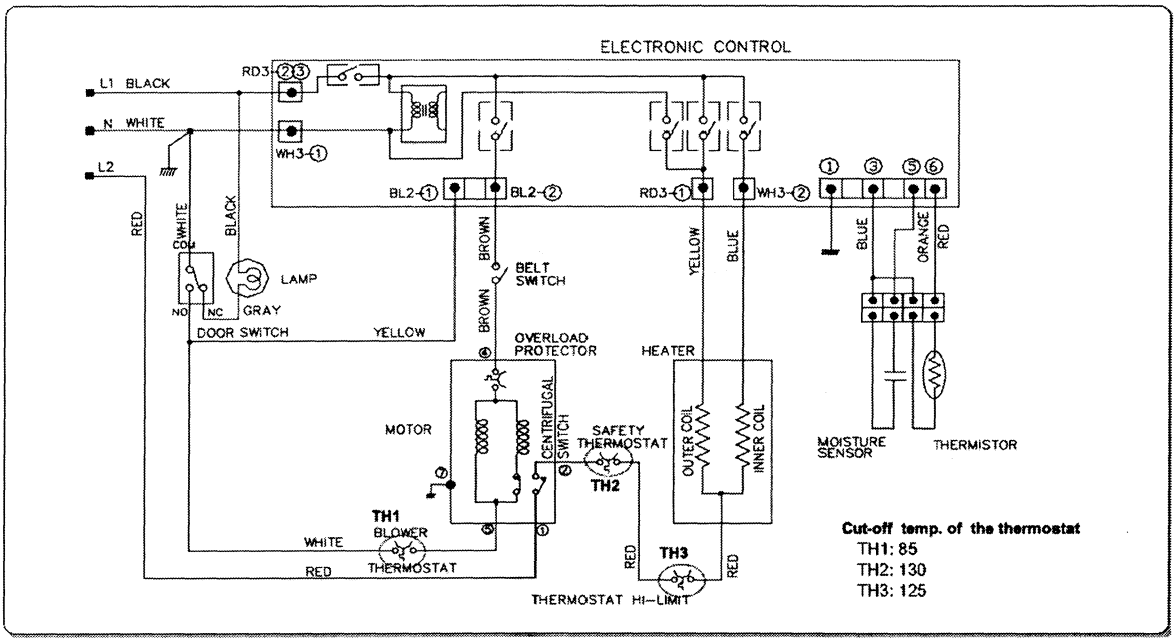
There are actually two separate valves in the gas valve assembly. These are arranged in tandem. The open voltage for the valve assembly is 120 VAC ± 15%, while the close voltage is 10 VAC ± 15%. The valve assembly's power consumption is below 13 W, divided evenly between each valve.

The first valve opens when the start button is pressed on the control panel. The igniter also activates at this time. When the igniter reaches a temperature of approximately 370 °F, the flame detect triggers the second valve to open. If ignition is not successful, the second valve will then close, and the startup cycle will repeate after a couple of minutes. With proper operation, though, the gas heating will function as it should.

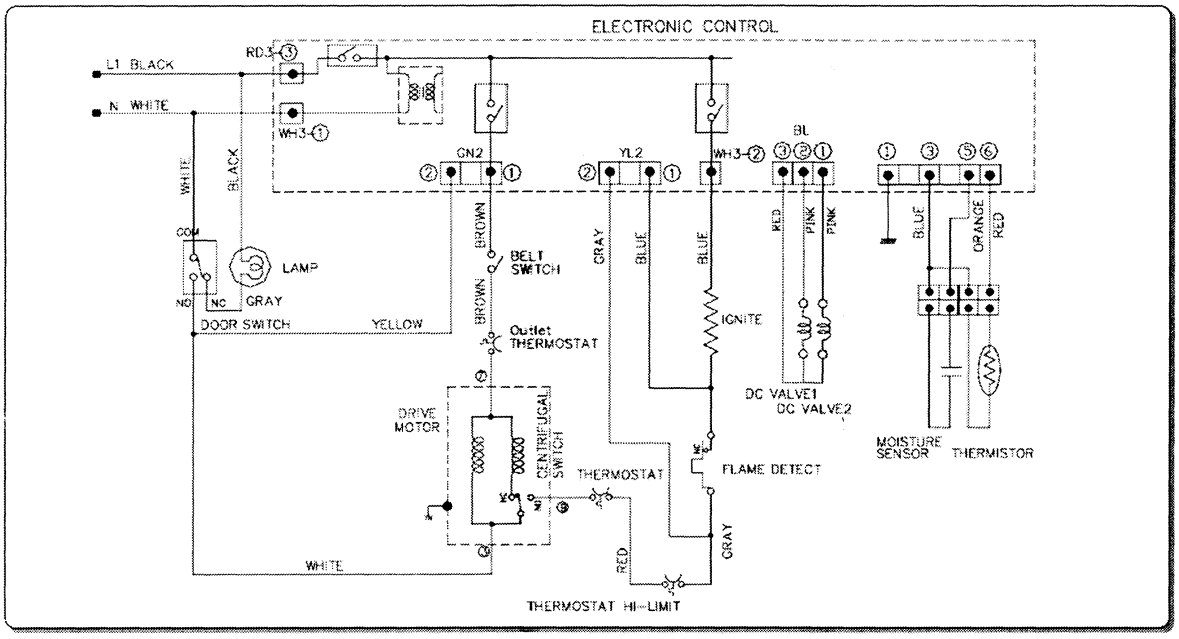


WIRING DIAGRAM

ELECTRIC DRYER WIRING DIAGRAM



GAS DRYER WIRING DIAGRAM



PROGRAM CHART

Cycle		Default			Conditions of operation and termination				
					Drying		Cooling		Wrinkle care
		Temp-erature	Dry Level	Display time	Electro-sensor	Temp-Control	Default time	Temp-Control**	Time
Sense Dry *	Heavy Duty	High	(Normal)	54min	Saturation	68±4°C	(5min)	47±5°C	3Hr
	Cotton/ Towel	Medium High	(Normal)	55min	Saturation	66±4°C	(5min)	47±5°C	
	Normal	Medium	(Normal)	41min	Saturation	60±4°C	(5min)	47±5°C	
	Perm. Permanent Press	Low	(Normal)	36min	Saturation	52±3°C	(5min)	47±5°C	
	Delicate	Low	(Normal)	32min	Saturation	52±3°C	(5min)	38±5°C	
	Ultra Delicate	Extra low	(Normal)	34min	Saturation	45±3°C	(5min)	38±5°C	
Manual Dry **	Speed dry	(High)	–	25min	Saturation	(70±5°C)	(5min)	(47±5°C)	3Hr
	Freshen Up	(Medium High)	–	20min	Saturation	(66±5°C)	(5min)	(47±5°C)	
	Air dry	–	–	30min	Saturation	No heater	NIA	NIA	
Load		Motor							Off Time: 6min On Time: 10sec
		Heater			Temperature Control for each cycle				

* Sense dry : "Dry Level" is set by users.

** Manual dry : "Temperature control" is set by users.

Default settings can be adjusted by users.

TROUBLESHOOTING

INTRODUCTION

The following sections cover dryer troubleshooting. They include information on a built-in diagnostic mode, associated error codes and operational testing procedures, and component testing procedures. The servicer should also refer to the Disassembly section of this manual if dismantling of the dryer is required. Any necessary electrical work should be followed by a check of the electrical connections shown on page D-17. Note that the electronic control module is layered with a moisture resistant insulation. Because of this, if a component on the electronic module fails, the module will most likely need replacing. As always, observe all safety considerations while servicing the unit.

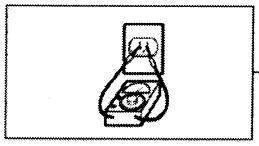
DIAGNOSTIC TESTING

The table below shows the steps of the diagnostic test mode. To activate this mode, make sure the unit is turned off but plugged in. Then press and hold the More Time and Less Time buttons simultaneously and press the Power Button. Then press the Start/Pause button to step through the several tests. If testing is necessary with the door open, hold the door switch to test the heater operation. Do not attempt to activate the heater forcibly, as this may trip one of the thermostats attached to the heater.

Pressing time of "START/PAUSE" button	CHECKING ACTION	DISPLAY	CHECKING POINT	REMARK
None	Electric control & Temperature sensor	18:88	Won't power up Defective LED	See test 1 Display : See page
		tE 1	Thermistor open	See test 2
		tE2	Thermistor close	
1 time	Motor	70 ~ 237 Measured Moisture Value.	Motor runs	See test 3
			Displays Moisture Sensor Operation: If moisture sensor is contacted with damp cloth. The display number is below 180, in normal condition.	See test 4
2 time	■ELECTRIC TYPE Motor + Heater 1 (1250W) ■GAS TYPE Motor + Valve	Current Temp.	■ELECTRIC TYPE : Heater runs ■GAS TYPE : GAS Valve runs (Display the Temperature of Inside drum.)	Gas valve See test 7
3 time	■ELECTRIC TYPE Motor + Heater 1 + Heater 2 (5400W) ■GAS TYPE Motor Type	Current Temp. (5 ~ 70)	In normal state if displayed temp. is increasing. Temperature in 4min : 113°F (45°C) • Above : 1" on , 1" off beep sound • Under : 0.5" on, 0.5" off beep sound	See test 5 ※ Off automatically after 5 minutes
During check, If door open	Motor & Heater Off + Lamp On + Buzzer beeps five times	dE	Door switch	See test 6
			Lamp	
During check, If door close	Motor & Heater Off + Lamp Off	70 ~ 237	Return once "1time" (See test 4) state.	
4 times	Control Off		Auto Off	

TEST 1 (120 VAC ELECTRICAL SUPPLY)

Caution	When measuring power, be sure to wear insulation gloves, and avoid electric shock.
Trouble Symptom	No power was applied to Controller. (LED, Display off)
Measurement Condition	With Dryer Power On; Connector linked to Controller.

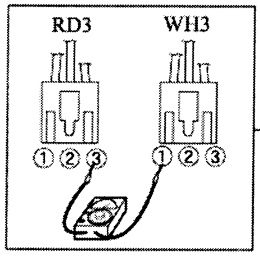


When measuring the of the outlet, is the voltage AC 110V ~ 125V?

NO

- Check the fuse box, circuit break.

YES

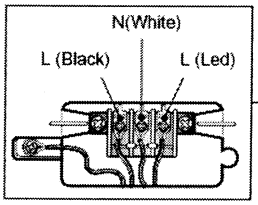


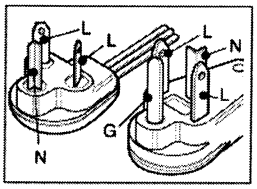
Check if the voltage measured between Connector "RD3-③" (Black) linked to the Controller and "WH3-①"(White) is 110V ~ 125V?

NO

- Check if Power Code is properly connected.

YES





① Check if the Controller wire is disconnected.
② Check if Terminal Block and Power Code are connected (Check Plug).
- Does Power Code N(Natural) line match to Terminal Center N(Natural) line?

NO

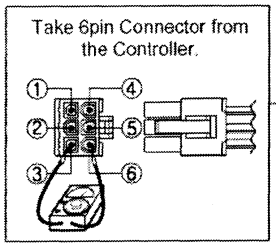
- Reconnect the controller.

YES

Replace controller.

TEST 2 (THERMISTOR TEST — MEASURE WITH POWER OFF)

Caution	Before measuring resistance, be sure to turn Power off, and do voltage discharge. (When discharging, contact the metal plug of Power code with the Ground.)
Trouble Symptom	① During Diagnostic Test, tE1 and tE2 Error occur. ② During operation, Heater would not turn off, or remains on. ③ Difference between actual and sensed temperature is significant.
Measurement Condition	After turning Power off, measure the resistance.

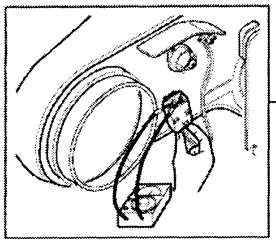


Check if resistance is in the range of Table 1 when measuring 6pin connector Pin ③ (Blue wire) and Pin ⑥ (Red wire) connected to Controller.

YES

- Check if Control and 6Pin connector is properly connected.
- Replace Controller.

NO



Check if resistance is in the range of Table 1 when measuring resistance between terminals after separating Harness From Thermistor assembly Connector.

NO

- Replace Thermistor.

YES

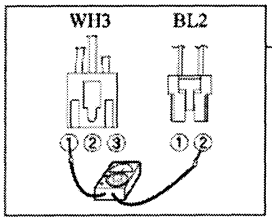
Check Harness-linking connector.

■ Table 1. Resistance for Thermistor Temperature.

Air TEMP.[°F (°C)]	RES. [kΩ]	Air TEMP.[°F (°C)]	RES. [kΩ]	Air TEMP.[°F (°C)]	RES. [kΩ]
50°F (10°C)	18.0	90°F (32°C)	7.7	130°F (54°C)	2.9
60°F (16°C)	14.2	100°F (38°C)	6.2	140°F (60°C)	3.0
70°F (21°C)	11.7	110°F (43°C)	5.2	150°F (66°C)	2.5
80°F (27°C)	9.3	120°F (49°C)	4.3	160°F (71°C)	2.2

TEST 3 (MOTOR TEST)

Caution	Before measuring resistance, be sure to turn Power off, and do voltage discharge. (When discharging, contact the metal plug of Power code with earth line.)
Trouble Symptom	Drum will not rotate; No fan function; No Heater operation.
Measurement Condition	Turn the Dryer's Power Off, then measure resistance.



Is resistance below 3Ω between Connector "WH3-①" (White wire) and "BL2-②" (Brown wire)?
※ Measure while door is closed.

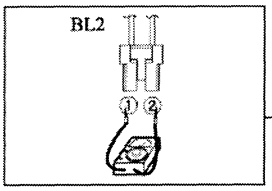
YES → • Replace Control. (Relay check) • Check Controller connector.

NO

Is resistance below 3Ω between Connector "WH3-①" (White wire) and "BL2-①" (Yellow wire)?
※ Measure while door is closed.

NO → • Check if Door frame presses door switch knob. • Check Door Switch. • Check Harness connection.

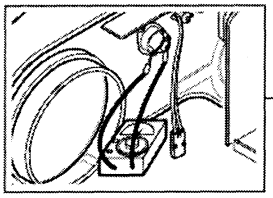
YES



Is resistance below 3Ω between Connector "BL2-①" (Yellow wire) and "BL2-②" (Brown wire)?

YES → • Replace Control. (Relay check) • Check Controller connector.

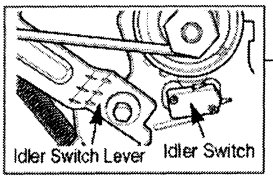
NO



Is resistance below 1Ω between terminals of Outlet Thermostat attached to blower housing?

NO → • Replace Outlet • Thermostat. (Refer to 'Component')

YES

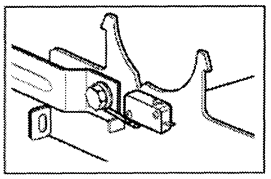


Does Idle Switch attached to Motor Bracket operate Level by drum belt? (Not operating Lever is normal.)

YES → • Check Idler Assembly. • Drum Belt cuts off • Drum Belt takes off from • Motor Pulley.

Is resistance below 1Ω between Idler Switch terminals?

NO → • Replace Idler Switch.



YES

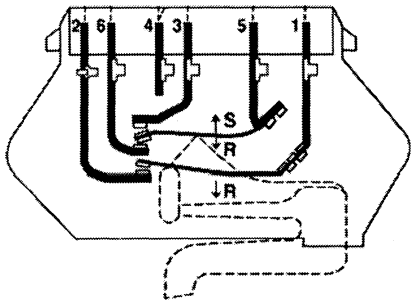
• Check Motor.(Refer to Next Page)
• Check if Control Connector is contacted.

For the safety of the servicer and his equipment, when checking this motor, be sure that the power is turned off and that any residue voltage is discharged.

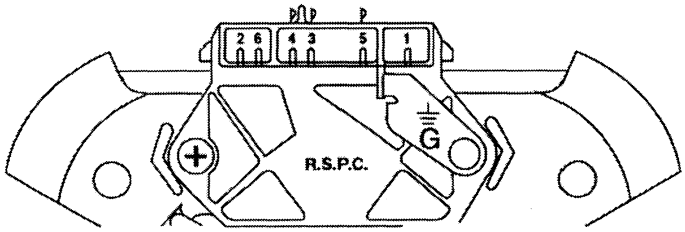
■ Contact On / Off by Centrifugal Switch

Terminal No / Mode	Resistance	①	②	③	④	⑤	⑥	Remark
Motor STOP	2 ~ 3Ω				●	●		Motor
	≒ ∞	●	●					Heater (Electric Models)
	≒ ∞			●			●	Gas Valve (Gas Models)
Motor RUN	3 ~ 5Ω				●	●		Motor
	< 1Ω	●	●					Heater (Electric Models)
	< 1Ω			●			●	Gas Valve (Gas Models)

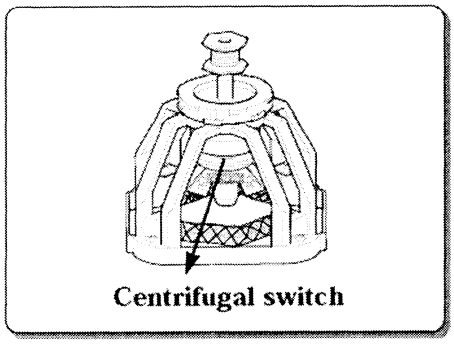
..... Open
——— Close



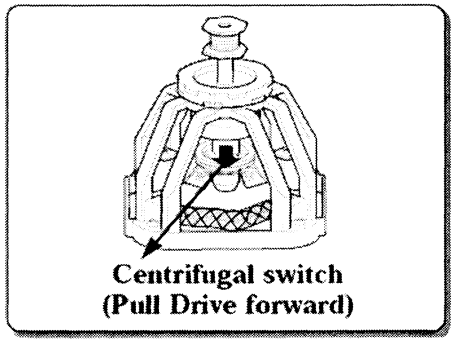
SWITCH SHOWN IN START POSITION



■ STOP MODE
(When Motor does not operate)

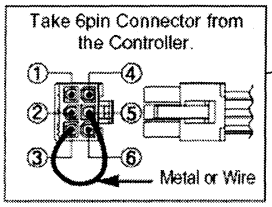


■ RUN MODE
(Motor operates)

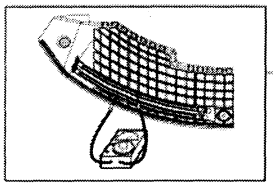


TEST 4 (MOISTURE SENSOR)

Caution	Before measuring resistance, be sure to turn Power off, and do voltage discharge. (When discharging, contact the metal plug of Power code with earth line.)
Trouble Symptom	Degree of dryness does not match with Dry Level.
Measurement Condition	Turn the Dryer's Power Off, then measure resistance.



Short with metal to 6pin connector's Pin ③ (BLUE wire) and Pin ⑤ (ORANGE wire) to Controller.

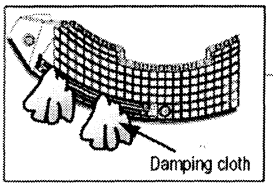


When measuring resistance in Electric load, is resistance below 1Ω?

NO

- Check Electro Load and
- Harness Connector.
- Check Harness-linking connector.

YES



When contacting cloth to Electro load:
1. Is the measurement within the range of Table 2 during Diagnostic Test?
2. Is the measurement within the range of Table 2 when measuring the voltage in 6pin connector's Pin ③ (BLUE wire) and Pin ⑤ (ORANGE wire)?

NO

- Replace Control and Check.

YES

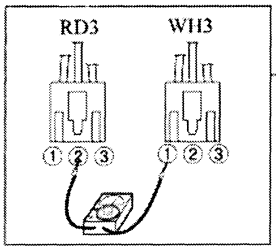
Normal Condition

■ Table 2. IMC Ratio and Display Value / Voltage (IMC : Initial Moisture Content)

IMC	Display Value	Voltage(DC) (between 6Pin terminal ③,⑤)	Remark
70% ~ 40%	50 ~ 130	2.5V	Weight after dewatering of Washing Machine
40% ~ 20%	100 ~ 20	2.0V ~ 4.0V	Damp Dry
10% ~ Dried clothes	205 ~ 240	Over 4.0V	Completely-dried clothes

TEST 5 (DOOR SWITCH TEST)

Caution	Before measuring resistance, be sure to turn Power off, and do voltage discharge. (When discharging, contact the metal plug of Power code with earth line.)
Trouble Symptom	Door Opening is not sensed.(During operation, when opening Door, Drum motor and Heater run continuously; Door Close is not sensed. (Drum motor will not operate. Display will flash at 0.5 second intervals.)
Measurement Condition	After turning Dryer Power Off, measure resistance.



Measure while Door is closed. Check if resistance is below 250Ω between "WH3-①" (White wire) and "RD3-②"(Black wire) Connector WH3, RD3 after taking WH3, RD3 out from Controller.

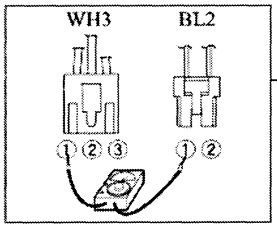
YES → • Door switch Check (Refer to Component testing.)

NO

Measure while Door is open. Check if resistance is 300~60Ω between "WH3-①" (White wire) and "RD3-②" (Black wire) Connector WH3, RD3 after taking WH3, RD3 out from Controller.

NO → • Check Lamp. (When opening Lamp, replace then measure again.) • Door switch Check(Refer to Component testing.)

YES



Measure while Door is open. Check if resistance is below 1Ω between "BL2-①" (Yellow wire) and "WH3-①" (White wire) after taking Connector WH3, BL2 out from Controller.

YES → • Door switch Check (Refer to Component testing.)

NO

Measure while Door is closed. Check if resistance is below 1Ω between "BL2-①" (Yellow wire) and "WH3-①" (White wire) after taking Connector WH3, BL2 out from Controller.

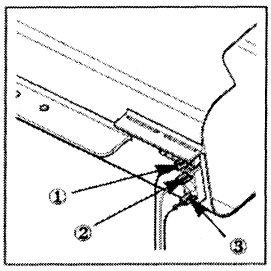
NO → • Door switch Check (Refer to Component testing.)

YES

Check Controller.
Check Harness-linking connector.

TEST 6 (HEATER SWITCH TEST)

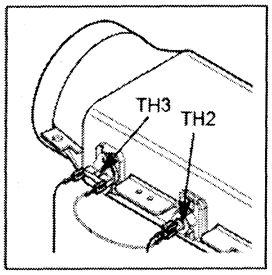
Caution	Before measuring resistance, be sure to turn Power off, and do voltage discharge. (When discharging, contact the metal plug of Power code with earth line.)
Trouble Symptom	While operating, Heating will not work. Drying time takes longer.
Measurement Condition	After turning Power off, measure the resistance.



1. Is resistance between Heater terminal ① and ② below 18 ~ 22Ω?
2. Is resistance between Heater terminal ① and ③ below 18 ~ 22Ω?
3. Is resistance between Heater terminal ② and ③ below 9 ~ 11Ω?

NO → • Replace Heater.

YES ↓



Check if the value of measured resistance is below 1Ω between terminal TH2 (Safety Thermostat).

NO → • Replace TH2 (Safety Thermostat).

YES ↓

Check if the value of measured resistance is below 1Ω between terminal TH3 (HI-Limit Thermostat).

NO → • Replace TH3 (HI-Limit Thermostat).

YES ↓

Check Motor. Check if the value of measured resistance is below 1Ω between terminal ① and ⑩ at RUN condition.

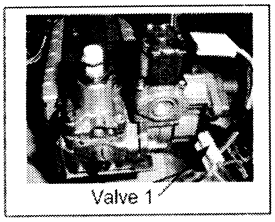
NO → • Check Motor and replace it.

YES ↓

Check Controller.
Check Harness-linking Connector.

TEST 7 (GAS VALVE TEST)

Caution	When measuring power, be sure to wear insulation gloves, and avoid electric shock.
Trouble Symptom	While operating, Heating will not work. Drying time takes longer.
Measurement Condition	With dryer power on

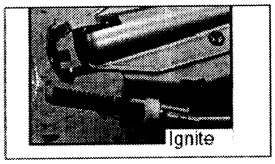


Power On & Start (Normal Cycle)

NO

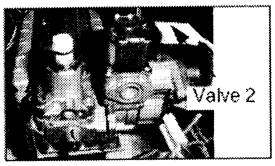
When measuring Valve 1 voltage, More than AC 90V? — NO → • Check thermostat Hi limit Safety

YES



Igniter operates? (after 1 min, Igniter becomes reddish) — NO → • Check Igniter & Flame detect

YES



When measuring Valve 2 voltage, Value is more than AC 90V? (10 sec after Igniter off) — YES → • Check Gas connection or Gas supply

NO

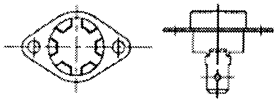
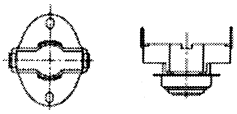
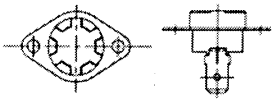
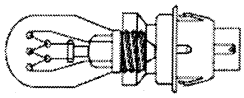
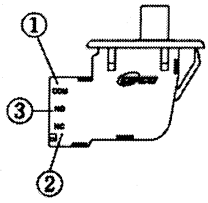
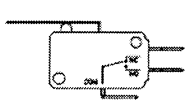
When measuring terminal resistance on "Valve 1", "Valve 2", Value is more than1.5 ~ 2.5kΩ? (Measure after Off) — YES → • Change Valve

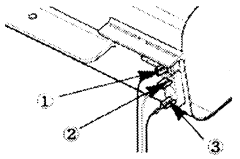
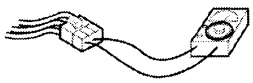
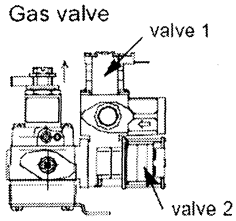
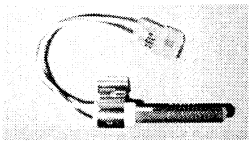
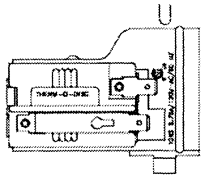
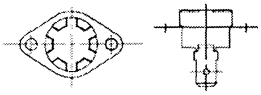
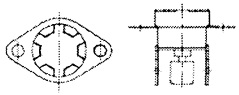
NO

• Harness check
• Controller change

COMPONENT TROUBLESHOOTING

For the safety of the servicer and his equipment, when checking these components, be sure that the power is turned off and that any residue voltage has been discharged.

Component	Test Procedure	Check result	Remark
1. Thermal cut off  • Check Top Marking : N130	Measure resistance of terminal to terminal ① Open at 266 ± 12°F (130 ± 7°C) ② Auto reset -31°F (-35°C) Same shape as Outlet Thermostat.	If thermal fuse is open must be replaced ① Resistance value ≈ ∞ ② Continuity (250°F ↓) < 1Ω	• Heater case-Safety • Electric type
2. Hi limit Thermostat (Auto reset) 	Measure resistance of terminal to terminal ① Open at 257 ± 9°F (125 ± 5°C) ② Close at 221 ± 9°F (105 ± 5°C)	① Resistance value ≈ ∞ ② Resistance value < 5Ω	• Heater case - Hi limit • Electric type
3. Outlet Thermostat (Auto reset)  • Check Top Marking : N85	Measure resistance of terminal to terminal ① Open at 185 ± 9°F (85 ± 5°C) ② Close at 149 ± 9°F (65 ± 5°C) Same shape as Thermal cut off.	① Resistance value ≈ ∞ ② Resistance value < 5Ω	• Blow housing - Safety • Electric type
4. Lamp holder 	Measure resistance of terminal to terminal	Resistance value : 80Ω ~ 100Ω	
5. Door switch  	Measure resistance of the following terminal 1) Door switch knob : open ①Terminal : "COM" - "NC" (1-3) ②Terminal : "COM" - "NO" (1-2) 2) Door switch push : push ①Terminal : "COM" - "NC" (1-3) ②Terminal : "COM" - "NO" (1-2)	① Resistance value < 1Ω ② Resistance value ≈ ∞ ① Resistance value ≈ ∞ ② Resistance value < 1Ω	The state that Knob is pressed is opposite to Open condition.
6. Idler switch 	Measure resistance of the following terminal : "COM - NC"	1. lever open ① Resistance value < 1Ω 2. Lever push (close) ② Resistance value ≈ ∞	

Component	Test Procedure	Check result	Remark
7. Heater 	Measure resistance of the following terminal ① Terminal : 1 (COM) - 2 ② Terminal : 1 (COM) - 3 ③ Terminal : 2 - 3	① Resistance value : 10Ω ② Resistance value : 10Ω ③ Resistance value : 20Ω	• Electric type
8. Thermistor 	Measure resistance of terminal to terminal Temperature condition : 58°F ~ (10~40°C) 58°F ~ 104F (10~40°C)	Resistance value : 10Ω	• Heater case - Hi limit • Electric type
9. Motor			• See Page D-23
10. Gas valve 	Measure resistance of the following terminal ① Valve 1 terminal ② Valve 2 terminal	① Resistance value : > 1.5kg ② Resistance value : > 1.5~2.5kg	• Gas type
11. Igniter 	Measure resistance of terminal to terminal	Resistance value : 100~800Ω	• Gas type
12. Flame Detect 	Measure resistance of terminal to terminal ① Open at 370°F ((Maximum) ② Close at 320°F	① Resistance value ≈ ∞ ② Resistance value < 1Ω	• Gas type
13. Outlet Thermostat (Auto reset)  • Check Top Marking : N95	Measure resistance of terminal to terminal ① Open at 203 ± 7°F (95 ± 5°C) ② Close at 158 ± 9°F (70 ± 5°C)	① Resistance value ≈ ∞ ② Continuity < 1Ω	• Gas type • Gas funnel
13. Outlet Thermostat (Manual reset)  • Check Top Marking : N100	Measure resistance of terminal to terminal ① Open at 212 ± 12°F (100 ± 7°C) ② Manual reset	If thermal fuse is open must be replaced ① Resistance value ≈ ∞ ② Continuity < 1Ω	• Gas type • Gas funnel

DISASSEMBLY

The following section provides details on disassembly of several of the more common items. The instructions should be sufficient to guide the servicer in gaining access to all parts of the dryer. If more details are necessary, the service manual provides exploded views and a greater variety of disassembly instructions.

Caution: It is recommended that dismantling of the unit only be performed with the power cord disconnected from the outlet.

DRUM LAMP

The drum lamp may be replaced by the following method.

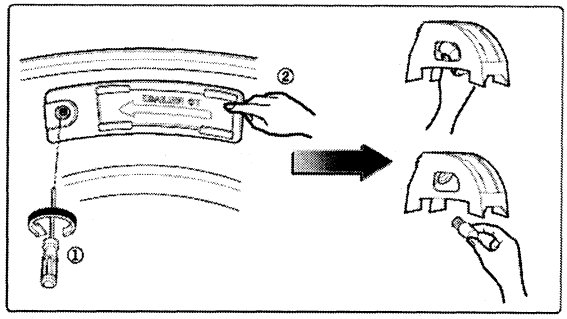
1) Open the dryer door.

2) Remove the screw that fastens the lamp window to the frame.

3) Slide the shield up and remove.

4) Remove the bulb and replace it with a 15-Watt, 120-Volt candelabra-base bulb.

5) Reposition the lamp window and fasten with the screw.

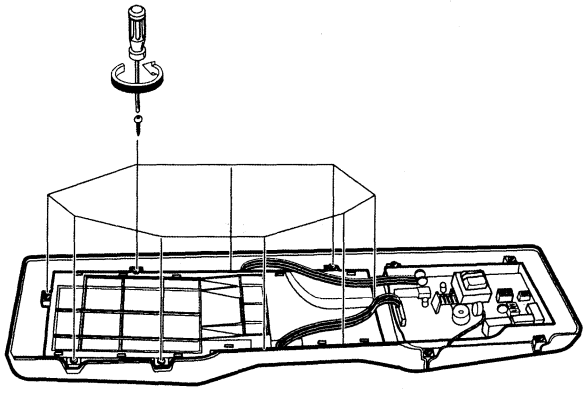


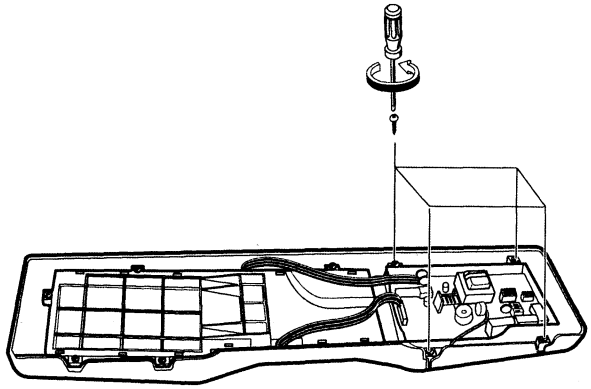
CONTROL PANEL

1) Remove 9 screws on the display board.

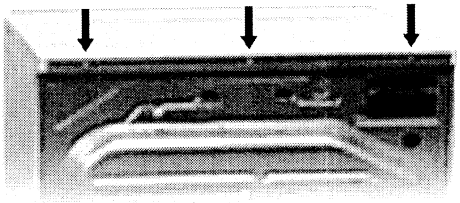
2) Remove 4 screws on the control board.

3) Now disassemble the control panel assembly.





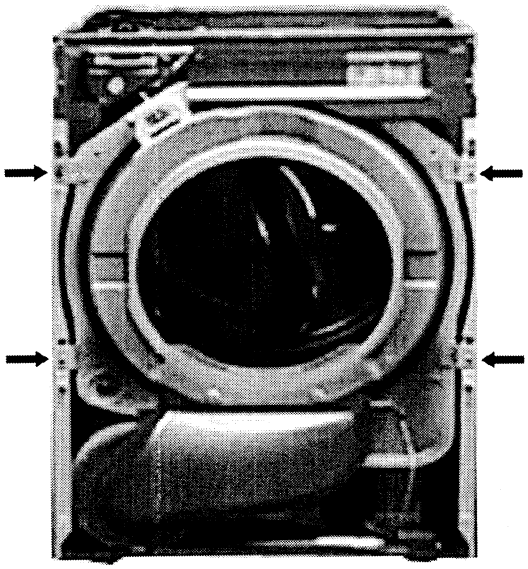
FRONT PANEL



1) Remove the top plate. There are three screws holding the top on (top picture).
2) The front panel can be removed by removing 4 screws located at the top (middle picture).
3) Then remove 2 screws in the bottom area of the door opening (middle picture).
4) Remember to disconnect the door switch and also the light wiring harness.

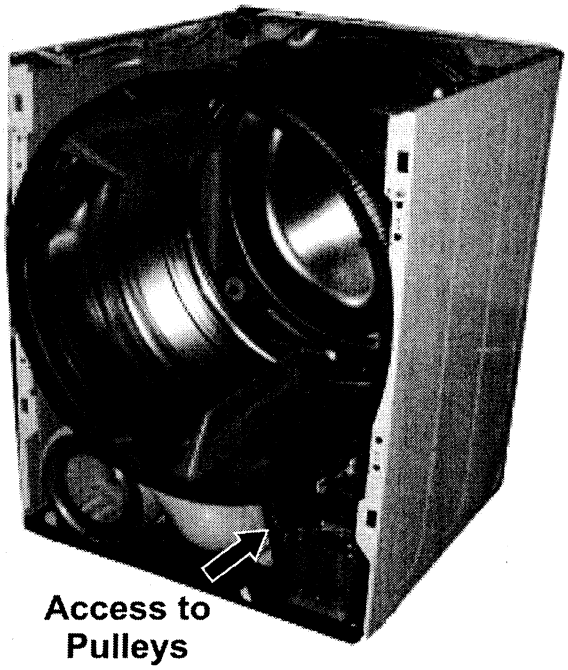
DRUM

1) To remove the front drum brace, first remove the frame brace above it (middle picture). There are two screws at the lower
2) The drum brace can be removed by removing the 4 screws (bottom picture). front and two screws on the top.

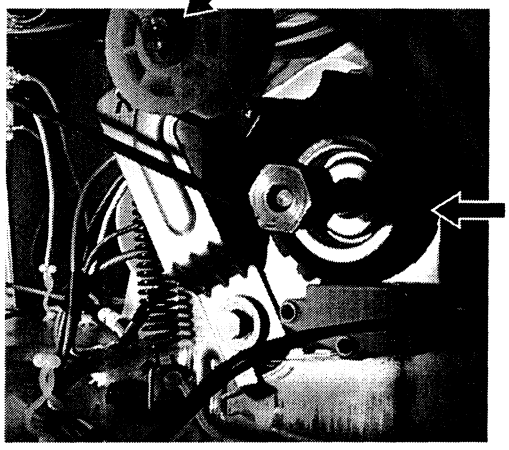


3) Once the front drum brace is removed, the belt must be taken off before the drum can be moved out of the way. Doing so will involve removing the belt without the aid of eyesight, as the belt is wrapped around the idler and motor pulleys. This can be done by hand, however, if the servicer remembers that the belt's tension comes from the spring loaded idler. By pushing the idler pulley up and to the left, the belt's tension will be released.

4) Once the belt is removed from the pulleys, the servicer can lift the drum out of the unit holding it by the belt. It may be helpful to refer to the picture at the bottom when repositioning the belt later on. Also, when repositioning the drum, the servicer should check to be sure that the drum's insulation is not folded against the front or rear drum braces. Folding will cause excess friction and may prevent the motor from turning. The remainder of the dryer's parts are now accessible. Refer to the service literature for more details.



Access to Pulleys



VIEW FROM BACK

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