



ELECTRIC & GAS DRYER SERVICE MANUAL

CAUTION

READ THIS MANUAL CAREFULLY IN ORDER TO PROPERLY DIAGNOSE PROBLEMS AND TO SAFELY PROVIDE QUALITY SERVICE ON THESE DRYERS.

MODEL: DLEX5101W

DLEX5101V

DLGX5102W

DLGX5102V



P/No.: MFL62119920

OCT. 2009 PRINTED IN KOREA

IMPORTANT SAFETY NOTICE

The information in this service guide is intended for use by individuals possessing skill and experience in electrical, electronic, and mechanical appliance repair. Any attempt to repair a major appliance may result in personal injury and property damage. The manufacturer or seller cannot be responsible for the interpretation of this information, nor can it assume any liability in connection with its use.



To avoid personal injury, disconnect power before servicing this product. If electrical power is required for diagnosis or test purposes, disconnect the power immediately after performing the necessary checks. To reduce the risk of personal injury, adhere to all industry recommended safety procedures including the use of long sleeved gloves and safety glasses. Failure to follow all of the safety warnings in this manual could result in property damage, personal injury or death.

RECONNECT ALL GROUNDING DEVICES

If grounding wires, screws, straps, clips, nuts, or washers used to complete a path to ground are removed for service, they must be returned to their original position and properly fastened.

WHAT TO DO IF YOU SMELL GAS:

- 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 your 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.

IMPORTANT

Electrostatic Discharge (ESD)
Sensitive Electronics

ESD problems are present everywhere. ESD may damage or weaken the electronic control assembly. The new control assembly may appear to work well after repair is finished, but failure may occur at a later date due to ESD stress.

■ Use an anti-static wrist strap. Connect wrist strap to green ground connection point or unpainted metal in the appliance.

- OR -

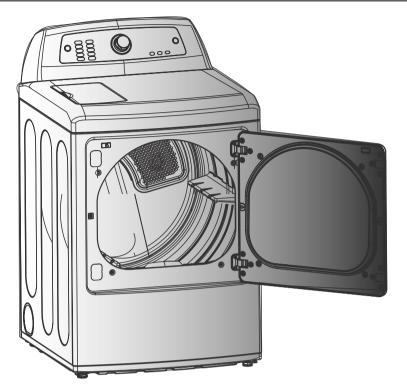
Touch your finger repeatedly to a green ground connection point or unpainted metal in the appliance.

- Before removing the part from its package, touch the anti-static bag to a green ground connection point or unpainted metal in the appliance.
- Avoid touching electronic parts or terminal contacts; handle electronic control assembly by edges only.
- When repackaging failed electronic control assembly in anti-static bag, observe above instructions.

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SPECIFICATIONS



■ Name: Electric and Gas Dryer

■ Power supply: Refer to the rating label on the dryer.

Gas: 120 VAC Electric: 240VAC

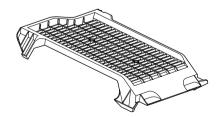
■ Size: 27 X 28.9 X 45.3 (inch)

■ Dryer capacity: IEC 7.3 cu.ft.

■ Weight: 133.2 (lbs)

Specifications are subject to change by manufacturer.

■ ACCESSORIES

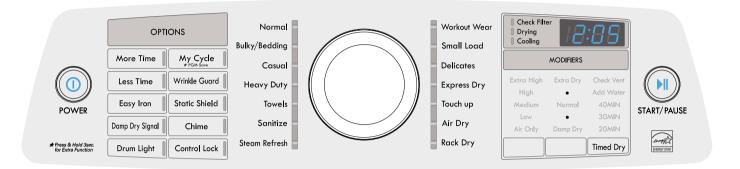


Dryer rack (1 each)

See page 6 of this manual for usage instruction.

ITEM			DLEX5101W DLEX5101V DLGX5102W DLGX5102V	REMARK
	Color Blue White / Stainless Silver			
Material & Finish		Top Plate	Powder coating	
		Door Trim	Spray	
POWER	RSU	PPLY	120V/240V 60Hz (26A)	
		MOTOR	250W (4.5A)	AC 120V
ELECTRICI	ΤΥ	HEATER	5400W (22.5A)	AC 240V(ELECTRIC MODEL)
CONSUMPTI	ON	LAMP	15 W (0.2A)	AC 120V
		GAS VALVE	13 W (0.11A) x 2	AC 120V(GAS MODEL)
		AG HEATER	1100W (9.2A)	AC 120V(STEAM MODEL)
		DC, PUMP	2.4W (0.15A)	DC 9V(STEAM MODEL)
CONTR	ROL	TYPE	Electronic	
DRUM (CAP	ACITY	7.3 cu.ft.	
Weight	(lbs)	- Net	133.2	
No. of	Prog	rams	14	
No. of D	ry O	ptions	6	
No. of Tempe	eratu	re Controls	5	
No. of [Dry L	evels	5	
Soun	ıd lev	els	3	
Camaay		Moisture	Available	Electrode sensor
Sensor	Те	mperature	Available	Thermistor
Reversible Door		Door	Available	
Drum			Stainless Steel	
Dryer Rack		ck	Available	
Child Lock		ck	Available	
Interior Light		ght	Available	
Produc	•	· · · · · · · · · · · · · · · · · · ·	27 x 28.9 x 45.3 (inch)	
Packing	y (Wx	(HxD)	29.8 x 31.3 x 47.24 (inch)	

FEATURES AND BENEFITS

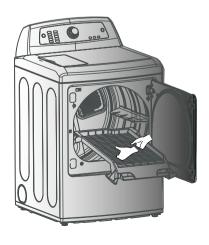


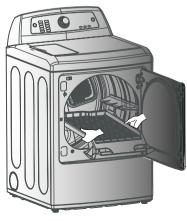
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INSTALLATION INSTRUCTIONS

Dryer Rack Installation Instructions

- Open the door.
 Hold the dryer rack
 with both hands.
- Put the dryer rack into the drum
- Check and be sure that the front of the rack is properly seated behind the lint filter.







Review the following options to determine the appropriate electrical connection for your home:



4-wire receptacle (NEMA type14-30R)

Use the instructions under option 1 if your home homehas a 4-wire receptacle (NEMA type 14-30R).

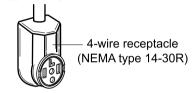


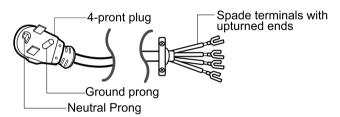
3-wire receptacle (NEMA type10-30R)

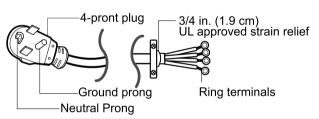
Use the instructions under option 2 or 3 if your home has a 3-wire receptacle (NEMA type 10-30R). Use option 2 if local codes and ordinances permit the connection of a chassis ground to the neutral connector. If this is not permitted, use option 3.

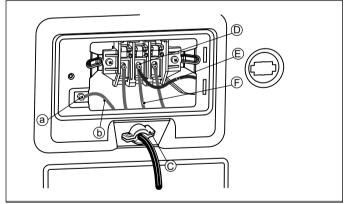
Option 1: 4-wire connection with a Power supply cord.

• If your local codes or ordinances do not allow the use of a 3 wire connection, or you are installing your dryer in a mobile home, you must use a 4-wire connection.





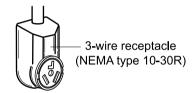


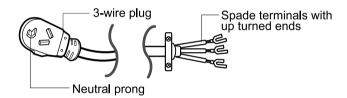


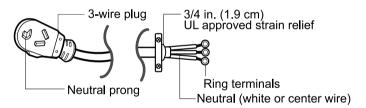
- 1. Connect the neutral wire (white) of the power cord to the center terminal block screw.
- 2. Connect the red and black wires to the left and right terminal block screws.
- 3. Connect the ground wire (green) of the power cord to the external ground screw. Remove the neutral ground wire of appliance and connect it to center screw.
- 4. Make sure that the strain relief screw is tightened and that all terminal block nuts are tight and the power cord is in the right position.

Option 2: 3-Wire Connection with a Power Supply Cord

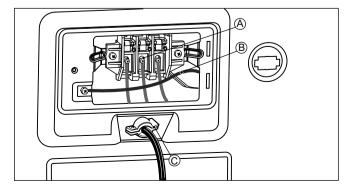
If your local codes or ordinances permit the connection of a frame-grounding conductor to the neutral wire, use these instructions. If your local codes or ordinances do not allow the connection of a frame-grounding conductor to the neutral wire, use the instructions under **Section 3: Optional 3-wire connection.**







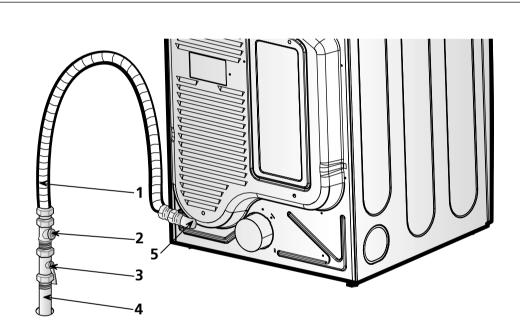
- 1. Connect the neutral (white or center) wire (B) to the center, silver colored, screw (A) and tighten securely.
- 2. Connect the other two power cord wires (red and black) to the left and right terminal block screws and tighten securely.
- 3. Tighten the strain relief screws (C) securely.



3-2. Connect Gas Supply Pipe (Gas Dryer ONLY)

For further assistance, refer to section on *Gas Requirements*.

- 1. Make certain your dryer is equipped for use with the type of gas in your laundry room. Dryer is equipped at the factory for natural gas with a 3/8" N.P.T. gas connection.
- 2. Remove the shipping cap from the gas connection at the rear of the dryer. Make sure you do not damage the pipe thread when removing the cap.
- 3. Connect to gas supply pipe using a new flexible stainless steel connector.
- Tighten all connections securely. Turn on gas and check all pipe connections (internal & external) for gas leaks with a non-corrosive leak detection fluid.
- 5. For LP (Liquefied Petroleum) gas connection, refer to section on Gas Requirements.



- 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' (6.1m) - Use $^1/_2$ " pipe
- 5 3/8" N.P.T. Gas Connection

DRYER CYCLE PROCESS

				Modifier	rs				
Type	Cycle	Fabrics Type	Temperature	Dry Level	Time in Min.	More Time/ Less Time	Wrinkle Guard	Damp Dry Signal	Static Shield
		Comforter,shirts,Trousers	Mid High	Off	20				
Steam Ref	Steam Refresh	1 - 5 garments (DO NOT use for delicate fabrics)	Adjustable		Adjustable				
	Sanitize	Comforter, Bedding, Children's clothing, etc.	High	Extra Dry	70		•		
Sensor	Towels	Denims, towels, heavy cottons.	Normal Adjustable	Mid High	55		•		
Dry*	Heavy Duty	Jeans, heavyweight items.	High	Normal Adjustable	54			•	
	Casual Permanent press, synthetic items.		Mid Low	Normal	36		•		
	Bulky/Bedding	•	Medium	Adjustable Normal	55				•
	Normal	Work clothes, etc.	Medium	Adjustable Normal	41		•		•
	Workout Wear	Workout wear	Off	Adjustable Off	27				
	Small Load	Only Normal & Cotton/Towels fabric type (Max 3lb)	High	Normal Adjustable	30		•		
	Delicates	Lingerie, sheets, blouses.	Mid Low	Normal Adjustable	32		•	•	•
	Express Dry	For small loads with short.	High	Off	25				•
			Adjustable	2"	Max 99				
Marral	Touch Up	For removing light wrinkles.	Mid High	Off	20				
Manual			Adjustable Off	Oii	Max 99	_			
Dry **	Air Dry	For items that require heat-free drying such as		Off	50 Max 99				
		plastics or rubber.	Mid Low, Low	a ::					
	Rack Dry	Wool sweaters, Silk,	Off	Off	50				
	Lingerie.		Mid Low, Low		Max 99				
			Motor					Off Tir	me: 6min
	Load		1,10,01					On Tir	ne: 10sec
Load			Heater	Temper	rature Co	ntrol for ea	ach cycle	>	

Default settings can be adjusted by users.

^{*} Sensor dry: Dry Level is set by users.
** Manual dry: Temperature control is set by users.

COMPONENT TESTING INFORMATION

! CAUTION When checking the Component, be sure to turn the power off, and do voltage discharge sufficiently.

Component	Test Procedure	Check result	Remark
1. Thermal cut off	Measure resistance of terminal to terminal	If thermal fuse is open must be replace	 Heater case- Safety
	① Open at 266 ± 12°F (130 ± 7°C)	① Resistance value ≒∞	Electric type
• Check Top Marking: N130	②Auto reset 31°F (-1°C) Same shape as Outlet Thermostat.	② Continuity (250°F ↓) < 1Ω	
2.Hi limit Thermostat (Auto reset)	Measure resistance of terminal to terminal		Heater case - Hi limit
	① Open at 257 ± 9°F (125 ± 5°C)	① Resistance value $= \infty$	Electric type
	② Close at 221 ± 9°F (105 ± 5°C)	② Resistance value $< 5\Omega$	
3.Outlet Thermostat (Auto reset)	Measure resistance of terminal to terminal		Blow housing - Safety
	① Open at 185 ±9°F (85 ± 5°C)	① Resistance value ≒∞	Electric type
Chack Top Marking:	② Close at 149 ± 9°F (65 ± 5°C)	② Resistance value $< 5\Omega$	
Check Top Marking: N85	Same shape as Thermal cut off.		
4. Lamp holder	Measure resistance of terminal to terminal	Resistance value: $80\Omega \sim 100\Omega$	
5. Door switch	Measure resistance of the following terminal		The state that knob is
	1) Door switch knob: open ① Terminal: COM - NC(1-3) ② Terminal: COM - NC (1-2) 2) Door switch push: push	① Resistance value < 1Ω ② Resistance value ≒∞	pressed is opposite to open condition.
	① Terminal: COM - NC (1-3) ② Terminal: COM - NC (1-2)	① Resistance value $= \infty$ ② Resistance value < 1 Ω	
6. Idler switch	Measure resistance of the following terminal: COM - NC	 lever open Resistance value < 1Ω Lever push (close) 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	 Resistance value: 10Ω Resistance value: 10Ω Resistance value: 20Ω 	Electric type
8. Thermistor	Measure resistance of terminal to terminal Temperature condition: 58°F ~ (10~40°C) 58°F ~ 104°F (10~40°C)	Resistance value: 10Ω	Heater case Hi limit Electric type
9. Motor			• See Page 15
10. Gas valve valve 1	Measure resistance of the following terminal ① Valve 1 terminal ② Valve 2 terminal	 Resistance value 2.3k~2.7kΩ Resistance value 2.3k~2.7kΩ 	Gas type
11. Igniter 5318EL3001 MEQ61841001	Measure resistance from terminal to terminal.	Resistance value $100{\sim}800~\Omega$ (for 5318EL3001) $40{-}150~\Omega$ (for MEQ1841001)	Gas type
12. Frame Detect	Measure resistance of termina to terminal ① Open at 370°F (Maximum) ② Close at 320°F	 Resistance value ≒∞ Resistance value < 1Ω 	Gas type

Component	Test Procedure	Check result	Remark
13. Outlet Thermostat (Auto reset)	Measure resistance of terminal to terminal		Gas type Gas funnel
	① Open at 203 \pm 7°F (95 \pm 5°C)	① Resistance value $= \infty$	
	② Close at 159 ± 9°F (70 ± 5°C)	② Continuity < 1Ω	
Check Top Marking: N95			
14. Outlet Thermostatt (Manual reset)	Measure resistance of terminal to terminal	If thermal fuse is open must be replaced	Gas type Gas funnel
	① Open at 212 ± 12°F (100 ± 7°C)	① Resistance value ≒∞	
	② Manual reset	② Continuity < 1Ω	
Check Top Marking: N100			

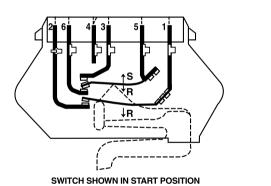
MOTOR DIAGRAM AND SCHEMATIC

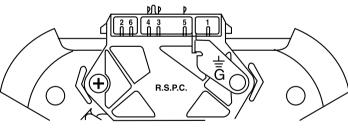
NOTE

When checking Component, be sure to turn Power off, then do voltage discharge sufficiently.

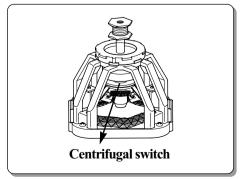
■ Contact On / Off by Centrifugal Switch

Termi	nal No		1 2						Damasala
Mode	Resistance	1		2 3	4	5	6	Remark	
	2 ~ 3Ω				•	•		Motor	
Motor STOP	≒∞	•	•					Heater (Electric Models)	
	≒∞			•				Gas Valve (Gas Models)	
	3 ~ 5Ω				•	•		Motor	
Motor RUN	< 1Ω	•	•					Heater (Electric Models)	
	< 1Ω			•			•	Gas Valve (Gas Models)	

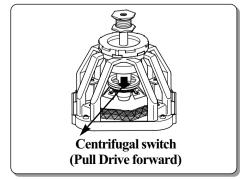




STOP MODE (When Motor does not operate)



■ .RUN MODE (Motor operates)



----- Open Close

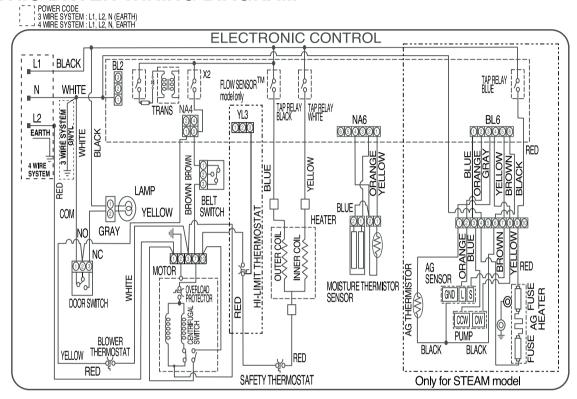
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WIRING DIAGRAM

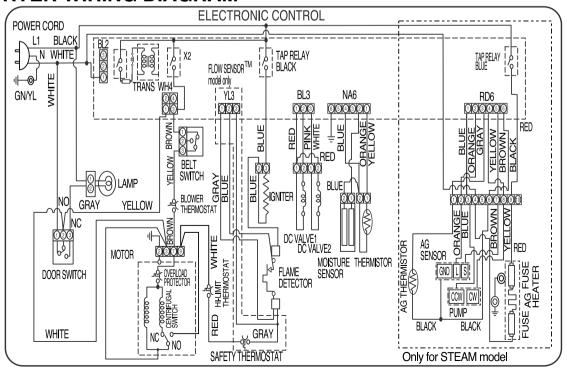
A CAUTION

Label all wires prior to disconnection when servicing controls. Wiring errors can cause improper and dangrous operation. Verify proper operation after servicing.

ELECTRIC DRYER WIRING DIAGRAM



GAS DRYER WIRING DIAGRAM



STEAM FUNCTION

8-1. Steam Cycle Guide

	STEAM	DEFAULT TIME	TEMP. CONTROL	DRY LEVEL	FABRIC STATE	FABRIC TYPE	MAXIMUM AMOUNT
STEAMSANITARY™		39 minutes			Dry	Comforter Bedding Children's clothing	Single (1 each) 3 lbs.
		20 minutes	0		Dry	Comforter Shirts*	Single (1 each) 5 each
STEAMFRESH™	+ REDUCE STATIC	10 minutes Only reduce static			Dry		8 lbs. (18 ltems.)
	+ EASY IRON	12 minutes			Dry	Shirts*	Shirts* (5 each)
HEAVY DUTY COTTON/TOWELS NORMAL	+ REDUCE STATIC	Follow selected		0	Wet	Follow selected cycle	8 lbs. (18 Items.)
PERM.PRESS DELICATES	+ EASY IRON	cycle		0	Wet	Follow selected cycle	Shirts* (5 each)
	+ REDUCE STATIC	45 minutes	0		Wet	Follow selected temp	8 lbs. (18 ltems.)
TIME DRY + EASY IRON		47 minutes	0		Wet	Follow selected temp	Shirts* (5 each)
Sports wear	+ EASY IRON	27 minutes			Wet	Sports wear	

^{*}Shirt: 70% cotton/30% poly blend. Except especially delicate fabrics.

- When the lint filter or exhaust duct is clogged, steam options will not give proper results.
- For best results, load articles of similar size and fabric type. Do not overload.

IMPORTANT NOTES ABOUT STEAM CYCLES:

- The steam feeder must be filled with water up to the MAX line. Otherwise, an error message will be displayed.
- If the lint filter or exhaust duct is clogged, the Steam options will not give proper results.
- For best results, load articles of similar size and fabric type.
 Do not overload.
- Water only Do not add any additives or other materials as these will damage your dryer.
- Before moving the dryer, make sure the steam feeder is empty.
- Best results are obtained with cotton/poly blend fabrics.

8-2. Troubleshooting for Steam Dryer

PROBLEM	POSSIBLE CAUSES	SOLUTIONS
ADD WATER indicator light is on during the drying cycle	Water supply error.	 Check steam feeder drawer: Make sure steam feeder is filled with water to MAX line. Make sure steam feeder is seated properly and drawer is fully cloased. Turn the dryer off then restart the Steam cycle. Do not use distilled water; the water level sensor in steam generator will not work. Pump not working. Unplug dryer and call for service.
Water drips from orifice when Steam Cycle starts.	This is normal.	This is steam condensation. The dripping water will stop after a short time.
Steam doesn't generate but no error code is shown.	Water level error.	Unplug dryer and call for service.
Garments still wrinkled after STEAM FRESH™.	Too many or to different types of garments in dryer.	 Small loads of 1 to 5 items work best. Load fewer garments. Load similar-type garments.
There are no creases left on garment after STEAM FRESH™.	The function of this cycle is to remove wrinkles from fabric.	Use an iron to make creases.
Garments have static after REDUCE STATIC.	This is normal.	Depends on individual moisture level in skin.
Garments are too damp or too dry after REDUCE STATIC.	Correct drying options not selected.	Select load weight manually before starting REDUCE STATIC option.
Garments are not uniformly damp after EASY IRON.	This is normal.	Depends on the amount or type of garments.
Water drips from door during Steam Cycle.	This is normal.	This is steam condensation on door surface.
Steam is not visible during Steam Cycle.	This is normal.	Steam vapor is difficult to see when the door is closed.
Drum does not turn during Steam Cycle.	This is normal.	The drum is turned off so that the steam vapor remains in the drum.

PROBLEM	POSSIBLE CAUSES	SOLUTIONS
Cannot see steam vapor at the beginning of cycle.	This is normal.	Steam is released at different stages of the cycle for each option.
The display shows BULKY LOAD.	MORE TIME button pressed.	Pressing the MORE TIME button several times will set the cycle for a large load such as a comforter.
Odors remain in clothing after STEAM FRESH™.	STEAM FRESH™ did not remove odor completely.	Fabrics containing strong odors should be washed in a normal cycle.

8-3. Display Fault/Error Codes for Steam Dryer

The error codes below will be displayed when attempting to start a drying cycle, or after activating the Diagnostic Test mode.

DISPLAY	Checking Part	Cause	Remark
tE1	Thermistor of blower	Thermistor open or shorted	tE1 error is displayed in the drying cycle or test mode.
tE2	housing		Replace the steam generator.
dE	Door SW	Door SW is abnormal. (Only TEST MODE)	dE error is only displayed in the test mode.
PS	Wire Connection (Black-White-Red)	Wire Connection is wrong. Wire Connection is loose.	See the 7-9 page. Guidance of the wire connection. For only electric dryer. *PS: Power Supply
tE4	Thermistor of steam generator	Steam generator thermistor open or shorted.	tE4 error is only displayed in the test mode.Replace the steam generator.
Add Water	Steam generator	Sensors do not detect that steam generator is full within 60 seconds.	If water in the steam feeder is not enough this error may be isplayed. Fill the feeder and restart the cycle.
E5	Water supply pump	When the pump valve is less than 10 in the test mode	 E5 error is only displayed in the test mode. Check the connection between harness wire and connector. Replace the water supply pump.
EE	EE PROM Error	EE PROM operation is abnormal.	EE error is only displayed in the test mode.

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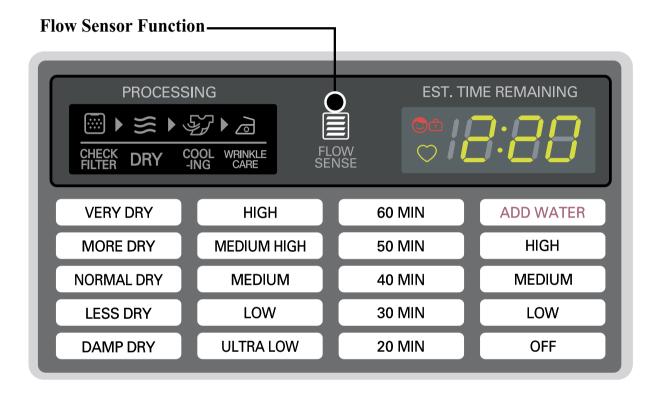
FLOW SENSOR FUNCTION

9-1 Flow sensor

This FlowSense[™] function detects the clogging or blocking of ducts.

Clogged duct vents or hoses decrease efficiency in drying clothes. Clogged vents can also cause fire. This function alarms you, when to clean the ducts.

When the alarm about duct clogging is on display of the panel, your duct vents should be cleaned by yourself or serviceman.

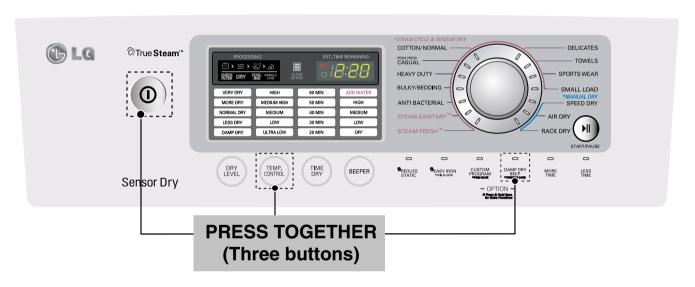


9-2 Installation check

This feature allows you to quickly verify that the exhaust system is adequate for the normal function of the dryer. The check takes only two minutes. The results of the check are displayed in the FlowSense display window as shown below

(Fig. 1). The dryer must be at room temperature for this test to be reliable. To perform this test, start the machine in standby mode (power off). Press and hold both the **DAMP DRY BEEP** and the **TEMP**. **CONTROL** buttons together while turning on the dryer with the POWER button i.e. Press together the three buttons **DAMP DRY BEEP** + **TEMP**. **CONTROL** + **POWER**. The dryer will start and run for 2 minutes while it checks temperatures. At the end of this short cycle, it will display the results as follows.

Fig.1



OR

After installation check, If the display shows....



If **YES** is shown in the display, the ductwork is free from blockages or restrictions.



If **NO** is shown in the display, the dryer ductwork has a blockage that needs to be removed immediately.

9-3 Troubleshooting for flow sensor dryer

1. FLOW SENSE indicator light is on



Is duct clogged?



Check & clean duct.

2. FLOW SENSE indicator light is on and does not disappear.

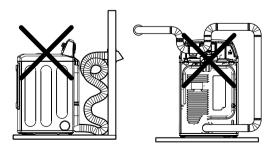
FLOW SENSE indicator light is on even when vents have been clean and even when the vents are off.
 → This is Normal. After flow sensor recheck full next cycle, flow sensor is reset.
 (Flow sensor bars will disappear after dryer has operated two cycle)

■ Bars Are Displayed but Don't Disappear

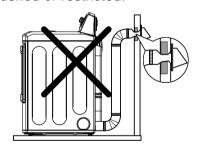
*Control Panel



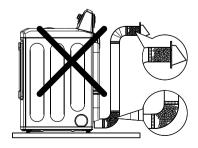
Avoid long runs of ducts or runs with multiple elbows or bends.



Make sure that the ductwork is not crushed or restricted.



Check for blockages and lint build up.



10

DIAGNOSTIC TEST

- 1. This TEST should be used for Factory test /Service test. Do not use this DIAGNOSTIC TEST other than specified.
- 2. Activating the Heater manually with the Door open may trip the Thermostat attached to the Heater, therefore do not activate it manually. (Do not press the door switch to operate the heater while the door is open)

■ ACTIVATING THE DIAGNOSTIC TEST MODE

- 1. UNIT must be in standby (unit plugged in, display off)
- 2. Press POWER while pressing MORE TIME and LESS TIME simultaneously.
- 3. Press START/PAUSE button to advance through diagnostics.

Pressing the START/PAUSE	CHECKING ACTION	DISPLAY	CHECKPOINT
	Electric control	8E9 (Elec Type) 898 (Gas Type)	Standard
None	_ &	V00	PGM Ver (8E8-V008E8)
	Temperature sensor	tE1	Thermistor open
		tE2	Thermistor shorted
		tE4	AG Thermistor open or shorted
		30 = Low	Motor runs
Once	Motor+Controller	moisture	Displays Moisture Sensor Operation If moisture sensor is contacted with damp cloth. The display number is below180innormalcondition
Twice	■ELECTRIC TYPE Motor+Heater1(2700W) ■GAS TYPE Motor	Current Temp. (5~70)	■ ELECTRIC TYPE Heater 1 is energized - 2700 W ■ GAS TYPE Valve not energized (Temperature in the drum is displayed in degrees C.)
3 times	■ELECTRIC TYPE Motor+Heater1+Heater2 (5400W) ■GAS TYPE Motor+Gasvalve	Current Temp. (5~70)	■ ELECTRIC TYPE: Heater 1 and heater 2 are energized - 5400 W ■ GAS TYPE: Gas valve is energized (Temperature in the drum is displayed in degrees C.)
4 times	Motor+Pump+ Heater2 (runs for 1sec)	Pump AD valve (11~255)	Pump runs
	(Heater1 off)	E5	Pump Error
5 times	Motor, Pump, Heater2 off	00	
6 times	Loads, Controller off		Power off

* To check pump operation:

At the fourth press of the test mode, if the AD value of the pump is higher than 10 on the display, the pump is normal. If it is lower than 10, E5 error will be displayed.

■ Test 1 120V AC Electrical supply

electric shock	Caution When measuring power, be sure to wear insulated gloves, to and avoid an electric shock					
No power was applied to controller. (LED, LCD Disp	lay off)					
With dryer power on; connector linked to controller.						
Check the outlet, is the voltage 110V ~ 125V AC?	NO	Check the fuse or circuit breaker				
YES						
Check if the voltage measured between connector BK2 or WH2-② (Black Wire) linked to the Controller and BL2-① (White Wire) Is 110~125V?						
YES						
 ① Check if the Controller wire is disconnected. ② Check if Terminal Block and Power Cord are connected (Check Plug). - Does Power Cord N (Natural) line match to Terminal Center N (Natural) line? 	NO	Reconnect the controller.				
YES Replace controller.	_ _					
	No power was applied to controller. (LED, LCD Displemental Displementa	No power was applied to controller. (LED, LCD Display off) With dryer power on; connector linked to controller. Check the outlet, is the voltage 110V ~ 125V AC? YES Check if the voltage measured between connector BK2 or WH2-② (Black Wire) linked to the Controller and BL2-① (White Wire) Is 110~125V? YES 1 Check if the Controller wire is disconnected. ② Check if Terminal Block and Power Cord are connected (Check Plug) Does Power Cord N (Natural) line match to Terminal Center N (Natural) line? YES				

Caution When measuring power, be sure to wear insulated gloves, to and avoid an elect	
Trouble Symptom	Check the Tab Relays Connection properly.
Measurement Condition	With dryer power on; connector linked to controller.

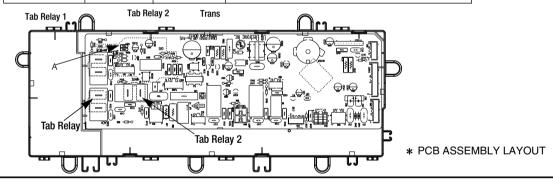
1. Power Connection

: Connection of the Tab Relay with Heater (Electric)

	Tab Relay 1	Tab Relay 2	Heater 1	Heater 2	Remark
High Mid High Medium	on	on	on	on	Temperature Control below $68\pm~4^{\circ}\text{C}$ Turn on Heater1 and Heater2.
Low Extra Low	on	off	on	off	Temperature Control below $52 \pm 4 ^{\circ}\text{C}$ Only Turn on Heater1.

: Connection of the Tab Relay with Burner (Gas)

	Tab Relay 1	Burner	Remark
High Mid High Medium	0	0	Temperature Control below 70 ± 4 °C Turn on Burner
Low Extra Low	0	0	Temperature Control below 47 ± 4°C Turn on Burner



2. Status Mode Of The Connection

: Connection of Tab Relay with the PCB ASSEMBLY (Electric)

	Color	Connecti	on	Remark
	Color	Harness	РСВ	nemark
Connector Housing	Black	Yellow wire Black wire Connector Housing	Tap relay 1	Check the Matching color Between Harness wire and Tab Relay. (Black Housing – Black Tab Relay)
	White	Blue wire Black wire Connector Housing	Tap relay 2	Check the Matching color Between Harness wire and Tab Relay. (White Housing – White Tab Relay)

3. Incorrect Connection Error and Results.

: Incorrect Connection of the Tab Relay and Connector Housing (Elec)

Items	Case	Heater1 Operation(black)	Heater2 Operation(White)	PCB condition Of operation
1.Black and White Housing	Wire ①, ② CROSS	Off	Off	Power Off
2.Black Housing	Wire ①, ② CROSS	Off	Off	Power Off
3.White Housing	Wire ①, ② CROSS	Normal	Normal	Power On
* 4.Black and White Housing	Housing CROSS	Heater2	Heater1	Power On
5.Black and White Housing	Housing and Wire ①, ② CROSS	Off	Off	Power Off

: Incorrect Connection of the Tab Relay and Connector Housing (Gas)

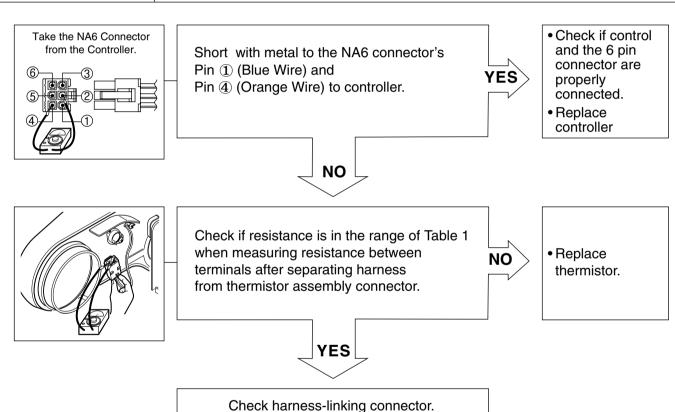
Items	Case	Heater1 Operation(black)	Heater2 Operation(White)	PCB condition Of operation
1.Black and White Housing	Wire ①, ② CROSS	Off	Off	Power Off

A CAUTION

- Caution! Improper connection of the heater can damage the heater or the main board.

■ Test 2 Thermistor Test --- Measure with Power Off

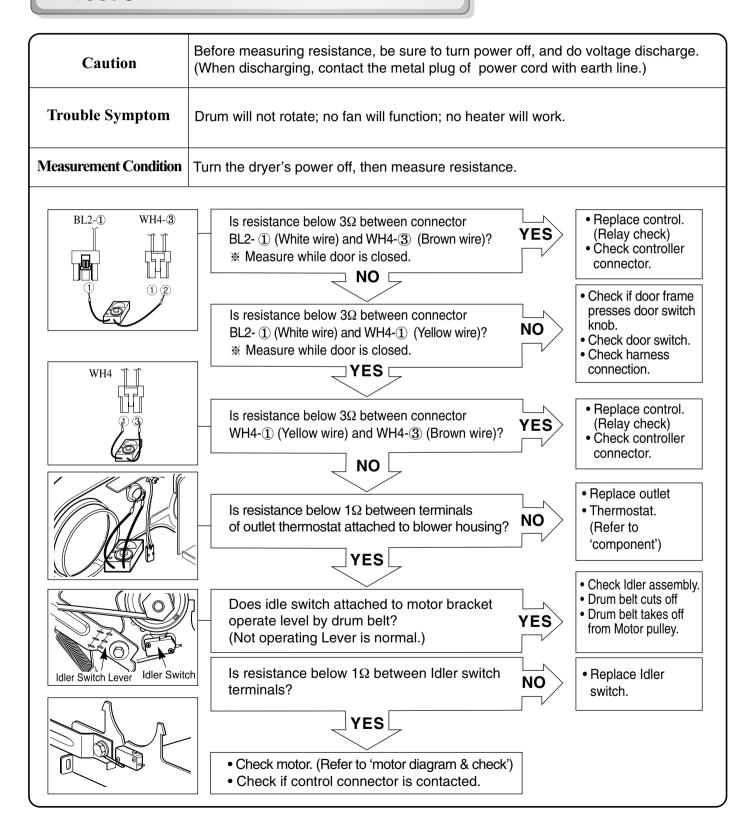
Caution	Before measuring resistance, be sure to turn power off, and do voltage discharge. (When discharging, contact the metal plug of power cord with the ground.)
Trouble Symptom	 During Diagnostic Test, tE1 and tE2 error occur. During operation, heater would not turn off, or remains on. Difference between actual and sensed temperature is significant.
Measurement Condition	After turning power off, measure the resistance.
	The talling perior on, induction are reconstance.



■ Table 1. Resistance for Thermistor Temperature.

Air TEMP. [°F(°C)]	RES. [KΩ]	Air TEMP. [°F(°C)]	RES. [KΩ]	Air TEMP. [°F(°C)]	RES. $[K\Omega]$
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
80°F (21°C)	11.7	110°F (43°C)	5.2	150°F (66°C)	2.5
70°F (27°C)	9.3	120°F (49°C)	4.3	160°F (71°C)	2.2

■ Test 3 Motor test



■ 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 cord with ground line.)						
Trouble Symptom	Degree of dryness does not match with dry Level.	Degree of dryness does not match with dry Level.					
Measurement Condition	Turn the dryer's power off, then measure resistance.						
Take NA6 Connector from the Controller. 6 3 5 Metal or Wire	Short with metal to the 6 pin connector's Pin② (Orange Wire) and Pin④ (Blue Wire) to controller.						
	When measuring resistance in electric load, is resistance below 1Ω?	NO	Check electro Load and harness connector Check harness-linking connector.				
Damping co	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 the NA6 connector's Pin ② (Orange wire) and Pin ④ (Blue wire)? YES	NO	Replace control and check.				
	Normal Condition						

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

IMC	Display Value	Voltage (DC) (between NA6 terminal ②,④)	Remark
70% ~ 40%	50 ~ 130	2.5V	Weight after removing from washing machine
40% ~ 20%	130 ~ 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 cord 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.					
BK2 WH1	Measure while door is closed. Check it resistance is below 2500Ω between BL2-①(White wire) and BK2-②Connector BL2,WH4 after taking BL2,WH4 out from controller.	YES	Door switch check (Refer to component testing.)			
	NO					
	Measure while door is open. Check it resistance is 300~60 Ω between BL2-①(White wire) and BK2-② (Black wire). Connector BL2,WH4 after taking BL2,WH4 out from controller	NO	Check lamp. (When opening lamp, replace then measure again.) Door switch check (Refer to component testing.)			
	123					
WH 1 BL2	Measure while door is open. Check it resistance is below 1Ω between WH4- $\mathbbm{1}(Yellow \ wire)$ and BL2- $\mathbbm{1}(White \ wire)$ after taking connector BL2,WH4 out from controller.	YES	Door switch check (Refer to component testing.)			
	NO					
	Measure while door is closed. Check it resistance is below 1Ω between WH4- $\mathbbm{1}(Yellow wire)$ and BL2- $\mathbbm{1}(White wire)$ after taking connector BL2,WH4 out from controller.	NO	Door switch check (Refer to component testing.)			
	YES					
	Check controller. Check Harness-linking connector.					

■ **Test 6** Heater switch test - Electric Type

Caution	Before measuring resistance, be sure to turn power off, and do voltage discharge. (When discharging, contact the metal plug of power cord 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 and ② below 18 ~ 22Ω? 2. Is resistance between heater terminal and ③ below 18 ~ 22Ω? 3. Is resistance between heater terminal and ③ below 9 ~ 11Ω? 	NO	• Replace heater.		
	YES				
Donly for FLOW SENSE model L2D(White) TH3 TH2	Check if the value of measured resistance is below 1Ω between terminal TH2 (Safety thermostat).	NO	Replace TH2 (Safety thermostat) and TH3 (Hi-Limit thermostat)		
L2—(Red) L2S(White)	Check if the value of measured resistance is below 1Ω between terminal TH3 (HI-Limit thermostat).	NO	Replace TH2 (Safety thermostat) and TH3 (Hi-Limit)		
■ Others	YES		thermostat)		
TH3 TH2	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.		
L2(Red) L2S(White)	YES				
 Wires L2(Red) L2D(White): Go to the duct (YL3 in main pcb L2S(White): Go to the 	Check controller. Check Harness-linking connector.				

■ Test 7 GAS Valve test - Gas Type

Caution	When measuring power, be sure to wear insulated gloves, to avoid electric shock.			
Trouble Symptom	While operating, heating will not work. Drying time takes longer			
Aeasurement Condition	With dryer power on			
	Power on & start (Normal cycle)			
Valve 1	When measuring Valve 1 voltage, More than DC 90V?	NO	Check thermostat hi-limit safety	
	YES			
	Igniter operates? (after 1 min, igniter becomes reddish)	NO	Check Igniter & frame detect	
	YES			
Valve 2	When measuring Valve 2 voltage, value is more than DC 90V? (10 sec after Igniter off)	YES	Check gas connection or gas supply	
	NO			
	When measuring terminal resistance on valve 1 and valve 2, valves are more than 1.5 ~ 2.5 k Ω ? (Measure after off)	YES	Change valve	
	NO	_		
	If valve 1 and valve 2 are under DC 10V, valves are Off?	NO	Change valve	
	YES			
	Harness check Controller change			

■ Test 8 Motor Assembly, DC, Pump

Caution	Before measuring resistance, be sure to turn power off, and do voltage discharge. (When discharging, contact the metal plug of power cord with earth line.)			
Trouble Symptom	During diagnostic test, E5 error occur.			
Measurement Condition	Turn the dryer's power off, then measure resistance.			
	After activating the *diagnostic test, press START/PAUSE button 4 times. Is AD value displayed higher than 10 ? YES NO Normal condition			
* diagnostic test : go to page	23			

■ Test 9 Generator Assembly

Caution	Before measuring resistance, be sure to turn power off, and do voltage discharge. (When discharging, contact the metal plug of power cord with earth line.)			
Trouble Symptom	During Steam cycle, generator assembly is not heating. During diagnostic test, tE4 error occur.			
Measurement Condition	Turn the dryer's power off, then measure resistance.			
	Is resistance 14.3 (±5%) between heater terminal ① and ②? YES NO NO NO NO NO NO Normal condition • Replace the DC Pump assembly • If measured resistance value is , replace the generator assembly, too.			

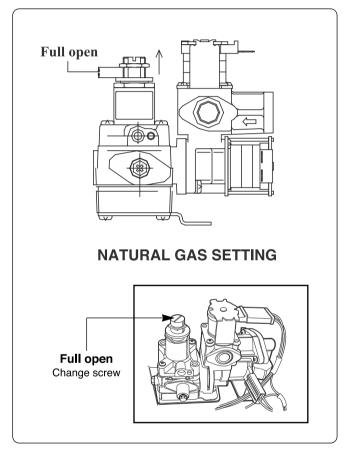
CHANGE GAS SETTING

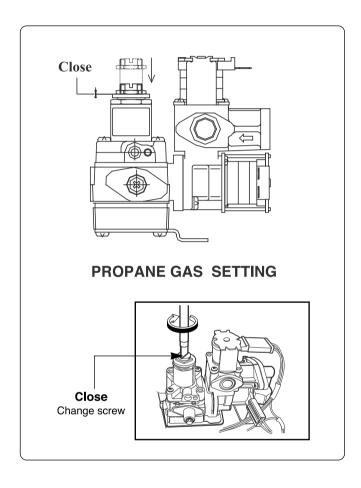
A Warning

The dryer must be used with the correct gas. If the dryer is converted to propane (LP.) using natural gas could result in fire, explosion, or personal injury. Conversion must be done a qualified technician.

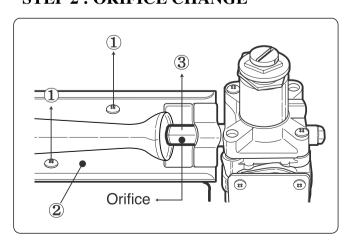
The dryer is set for natural gas at the factory. A propane conversion kit is available through the parts department to licensed technicians only. The part numbers are listed below.

STEP 1: VALVE SETTING





STEP 2: ORIFICE CHANGE

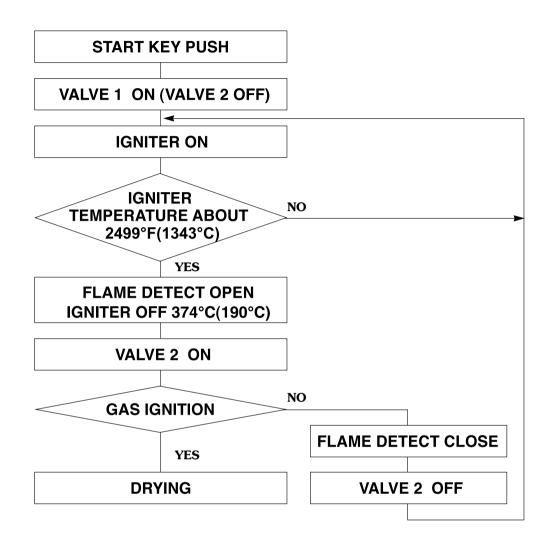


- 1 Remove 2 screws.
- 2 Disassemble the pipe assembly.
- 3 Replace Natural Gas orifice with Propane Gas orifice.

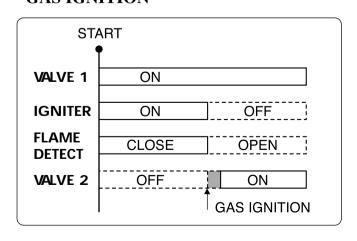
Gas type	Orifice P/No	Marking	Shape
Natural Gas	4948EL4001B	NCU	
Propane Gas	4948EL4002C	PCU	

Kit contents Orifice (Dia. = 1.47mm, for Propane Gas)
 Replace Label
 Instruction sheet

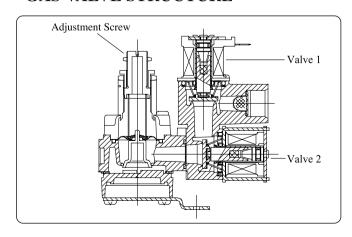
■ GAS VALVE FLOW



GAS IGNITION



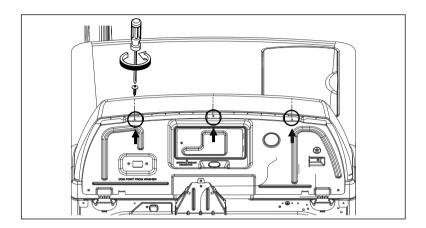
GAS VALVE STRUCTURE



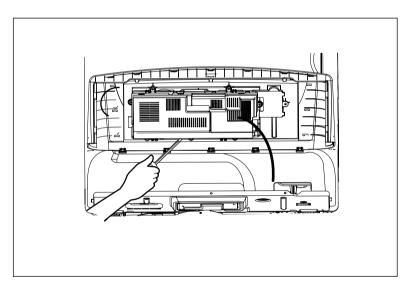
DISASSEMBLY INSTRUCTIONS

* Disassemble and repair the unit only after pulling out power plug from the outlet.

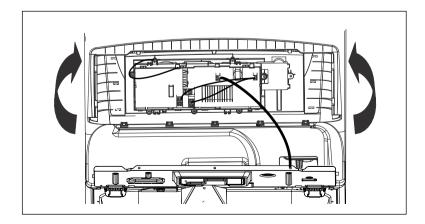
CONTROL PANEL ASSEMBLY



1. Remove the 3 screws from the back panel.

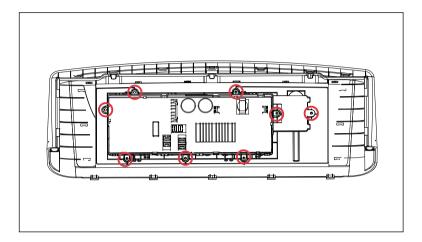


- 2. Place a towel over the top cover to prevent scratch to the surface. Gently lift each corner of the back panel, then roll it forward so it rests on top of the dryer.
- **3.** With a flat blade screwdriver, press the tabs on the side of the PWB (PCB) box and gently pry it open.



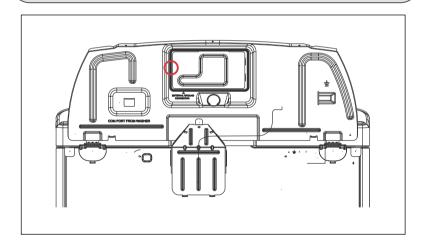
- **4.** Disconnect the wiring from the PWB (PCB) board.
- **5.** Disassemble the control panel assembly from top cover.

CONTROL PANEL

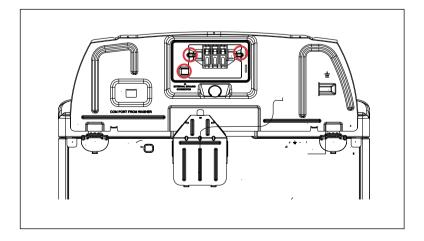


- **1.** Remove 8 screws from control panel assembly.
- **2.** Separate PCB from control panel.

PANEL REAR [ELECTRIC]

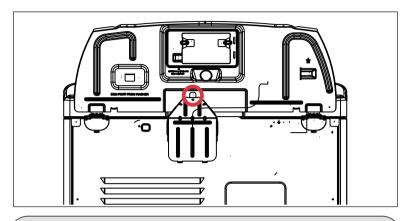


- **1.** Remove 1 screw.
- **2.** Pull out the cover.



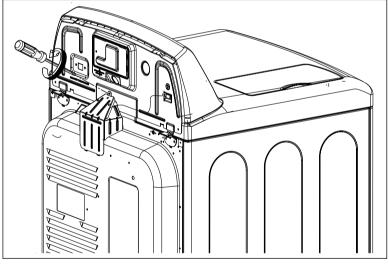
- **1.** Remove 3 screws.
- **2.** Disassemble terminal block and wire from panel rear.

PANEL REAR [COMMON]



- **1.** Remove one screw for removing safety cover.
- **2.** Remove 3 screws remained on the panel rear.
- **3.** Lift out the panel rear.

TOP COVER [OPENING]

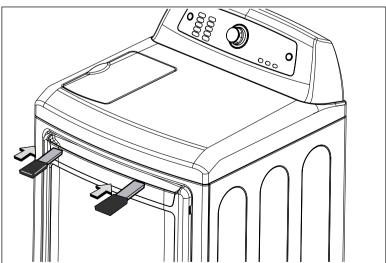


▲ WARNING!

Before lifting the top cover, remove the safety cover.

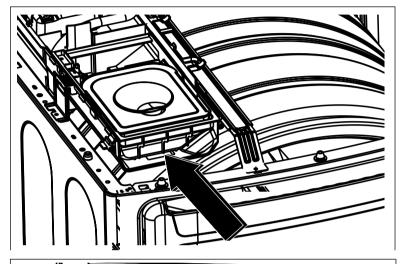
If you don't remove the safety cover, it will be destroyed.

when you press the holder, be careful scratch. For preventing the scratch, prepare the soft material.



- **1.** Remove 1 screw for lifting safety cover.
- **2.** After checking the safety cover, press the holder with flat-tip screw driver inside the top cover.
- **3.** Open the top cover.
- **4.** Disassembly top cover from cabinet assembly.

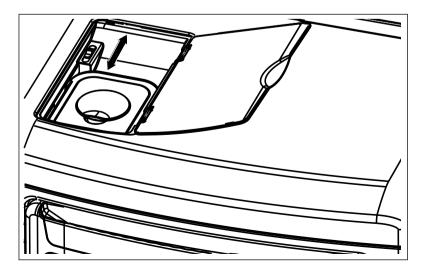
TOP COVER [CLOSING]



A WARNING!

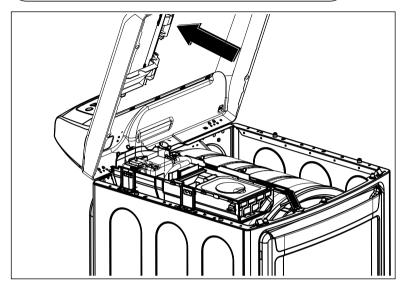
When you close the top cover, drawer has to be inserted to the end. Otherwise drawer will be stuck in the guide. And it will be destroyed.

- **1.** Press the drawer to the end.
- 2. Put the locker into CLOSE.
- **3.** Close the top cover.

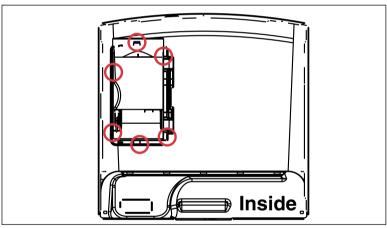


4. Test moving of the locker to make sure the drawer is properly located and the locker is operated correctly.

FRAME BODY & LID

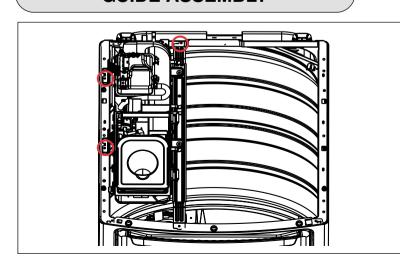


1. Open the top cover.



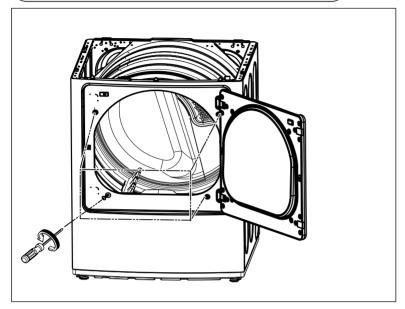
2. With a flat blade screwdriver, press the tabs on the side of frame body and gently take it out.

GUIDE ASSEMBLY

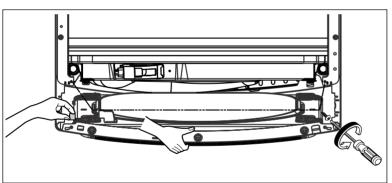


- **1.** Disconnect wiring to the harness.
- 2. Remove 3 screws.
- **3.** Pull out the guide assembly.

CABINET COVER

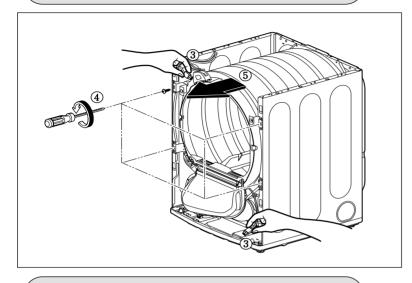


1. Open the door and remove the 4 screws from the cabinet cover then close the door.



- **2.** Remove the 2 screws, then tilt the cabinet cover toward the front of dryer slightly.
- **3.** Disconnect wiring to the door switch and lift the cabinet cover.

TUB DRUM [FRONT]

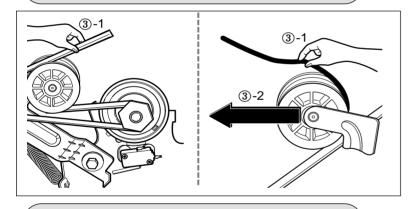


▲ WARNING!

WHEN YOU DISASSEMBLY THE LAMP CONNECTOR, BE SURE TO TAKE GLOVES AND CAREFUL CABINET EDGE. FAILURE TO DO SO CAN CAUSE SERIOUS INJURY.

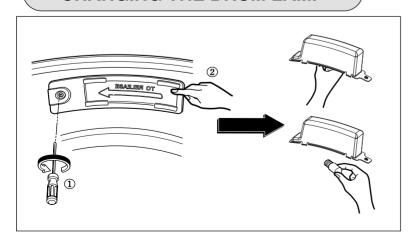
- **1.** Disassemble the top plate.
- 2. Remove cabinet cover.
- **3.** Disconnect the door lamp and electrode sensor connector.
- 4. Remove 4 screws.
- **5.** Disassemble the tub drum [Front].

DRUM ASSEMBLY



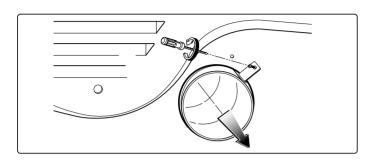
- **1.** Disassemble the top plate.
- 2. Remove the cabinet cover and tub drum [front].
- **3.** Loosen belt from motor and idler pulleys.
- **4.** Carefully remove the drum.

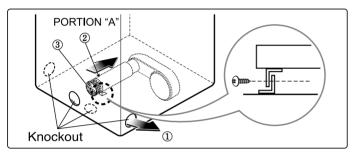
CHANGING THE DRUM LAMP

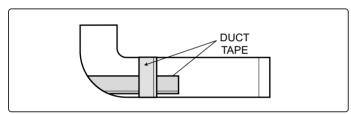


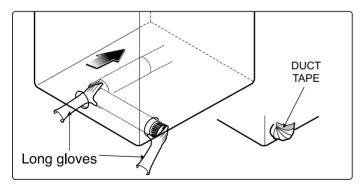
- **1.** Disassemble the door.
- **2.** Hold the lamp shield in place while removing the screw.
- **3.** Slide the shield up and remove.
- **4.** Remove the bulb and replace with a 15 watt, 120 volt, candelabra-base bulb.
- **5.** Replace the lamp shield and screw.

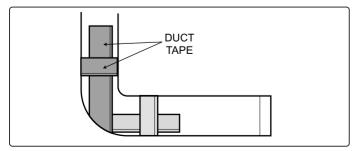
DRYER EXHAUST CHANGE











▲ WARNING!

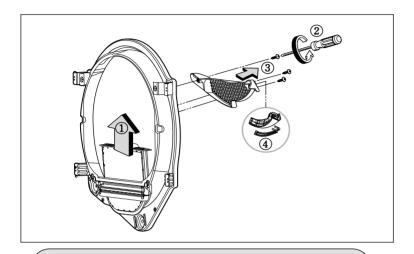
BEFORE PERFORMING THIS EXHAUST INSTALLATION, BE SURE TO DISCONNECT THE DRYER FROM ITS ELECTRICAL SUPPLY.

TO REDUCE THE RISK OF PERSONAL INJURY, ADHERE TO ALL INDUSTRY RECOMMENDED SAFETY PROCEDURES INCLUDING THE USE OF LONG SLEEVED GLOVES AND SAFETY GLASSES. FAILURE TO FOLLOW ALL OF THE SAFETY WARNING IN THE MANUAL COULD RESULT IN PROPERTY DAMAGE, PERSONAL INJURY OR DEATH.

- 1. Remove a screw and the exhaust duct.
- **2-1.** Detach and remove a knockout at the botton, left or right side as desired. (Right side vent not available on gas dryer)
 - (1), (2), (3) the order of work.
- **2-2.** Reconnect the another duct [11 in (28cm)] to the blower housing, and attach the duct to the base. (Duct is a service part)
- **3-1.** Pre-assemble 4" elbow with 4" duct. Wrap duct tape around joint.

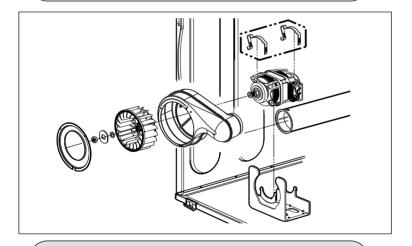
3-2. Insert the elbow duct assembly through the side opening and connect the elbow to the internal duct.

FILTER ASSEMBLY



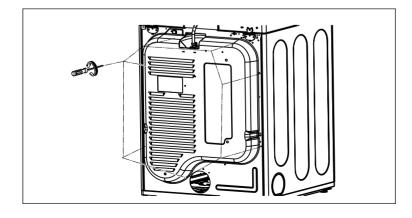
- 1. Remove the filter.
- **2.** Remove 3 screws.
- **3.** Remove the cover grid.
- **4.** Disconnect the electrode sensor.

BLOWER HOUSING



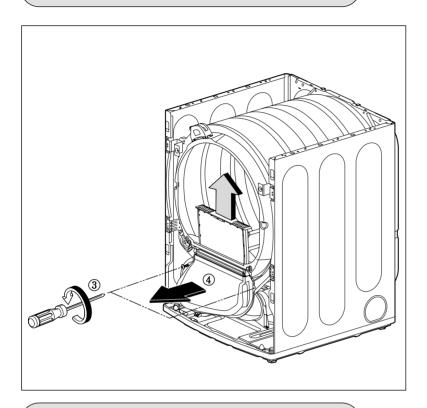
- **1.** Disassemble the top plate.
- **2.** Remove the cabinet cover and tub drum [Front].
- 3. Remove the drum assembly.
- **4.** Remove 2 screws and cover (Air guide).
- **5.** Remove the bolt and washer.
- **6.** Remove the fan.
- **7.** Disconnect the motor clamp and motor.

BACK COVER



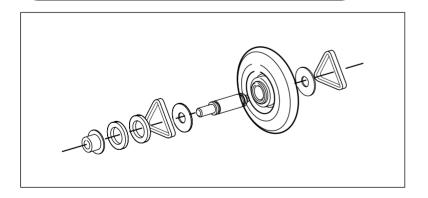
- **1.** Disassemble the top plate.
- **2.** Remove the cabinet cover and tub drum [Front].
- **3.** Remove the drum assembly.
- 4. Remove 7 screws.
- **5.** Pull the tub drum [Rear] towards the front.

AIR DUCT



- **1.** Disassemble the top plate.
- 2. Remove the cabinet cover .
- **3.** Remove the filter and 2 screws.
- **4.** Remove the air duct.

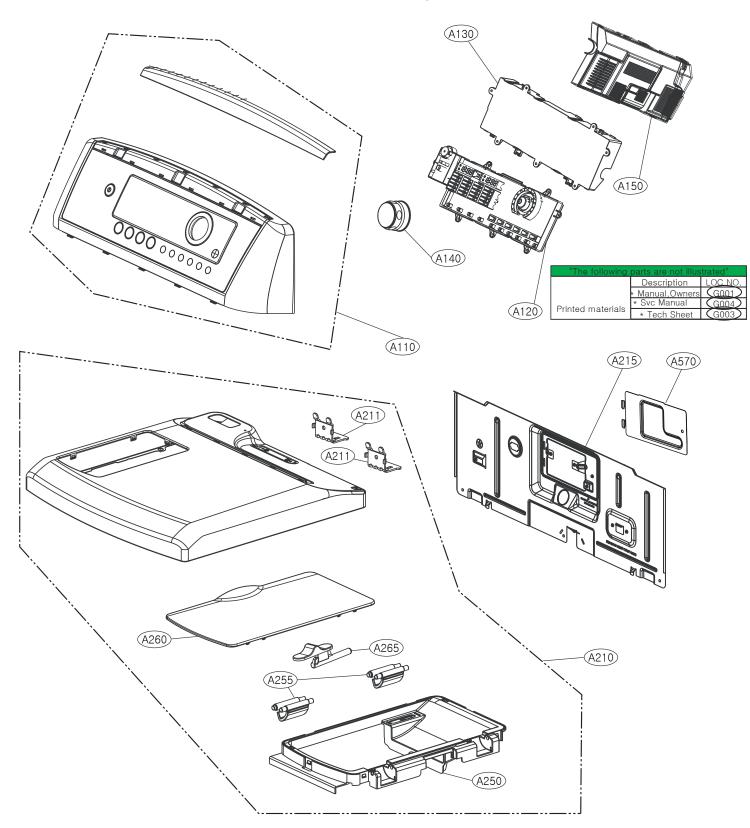
ROLLERS



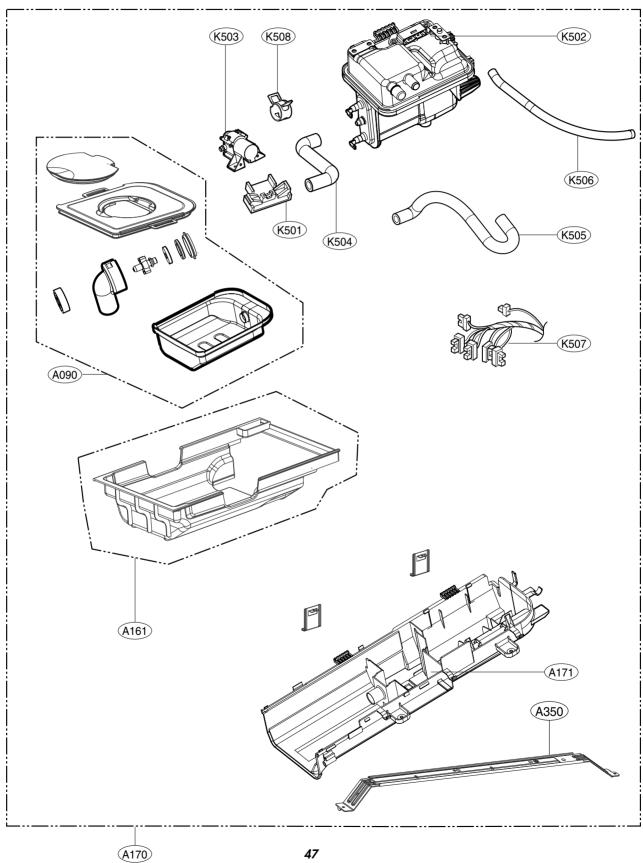
- **1.** Disassemble the top plate.
- **2.** Remove the cabinet cover and tub drum [Front].
- **3.** Remove the drum assembly and tub drum [Rear].
- **4.** Disconnect the air duct from the tub drum [Front].
- **5.** Remove the roller from the tub drum [Front] and tub drum [Rear].

EXPLODED VIEW

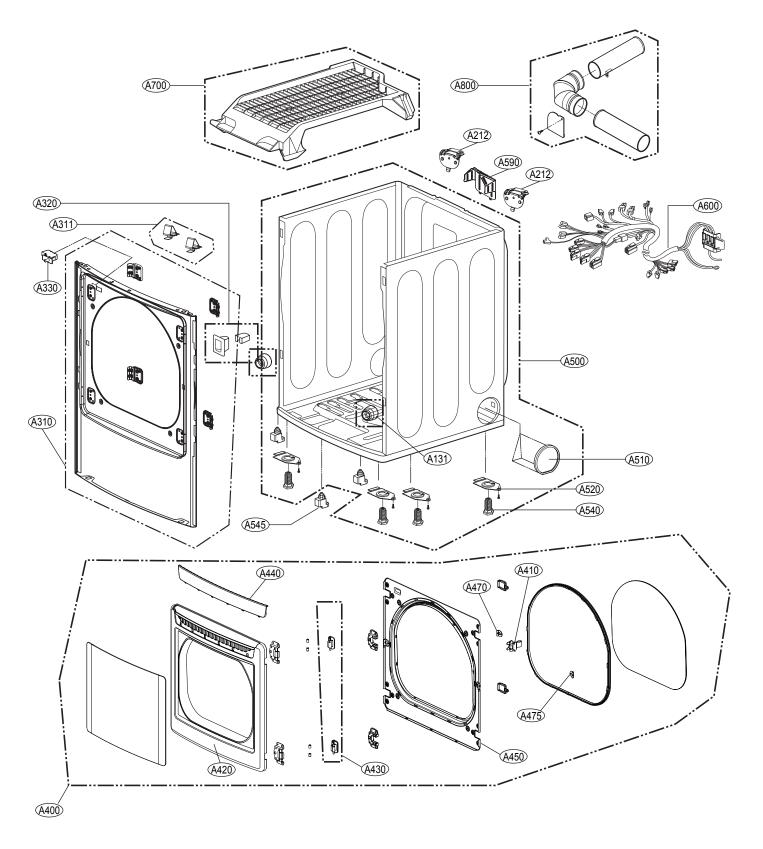
13-1. Control Panel and Plate Assembly



13-2. Guide Assembly



13-3-1. Cabinet and Door Assembly: Electric Type



13-4-1. Drum and Motor Assembly: Electric Type

