LG

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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 : DLE5001W DLG5002W
DLE5070W DLG5071W
DLE4901W DLG4902W

LG Electronics Inc.

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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.

⚠ WARNING !

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.

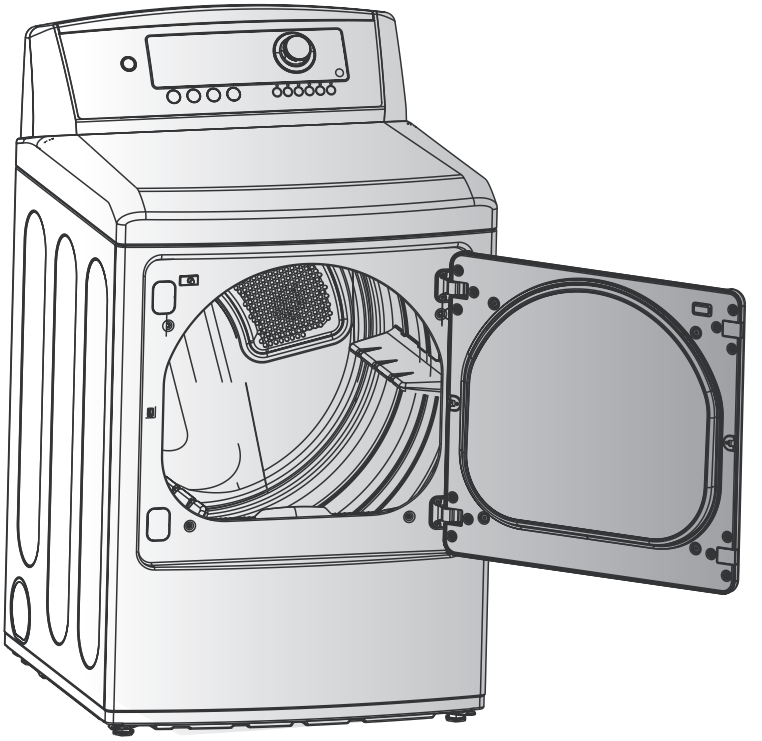
- OR -

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.

CONTENTS

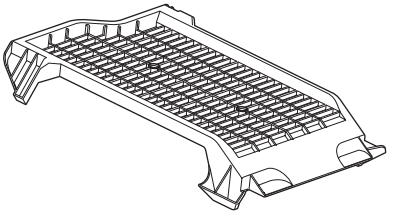
1 SPECIFICATIONS



- 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: 127.4 (lbs)

Specifications are subject to change by manufacturer.

■ OPTIONAL ACCESSORIES



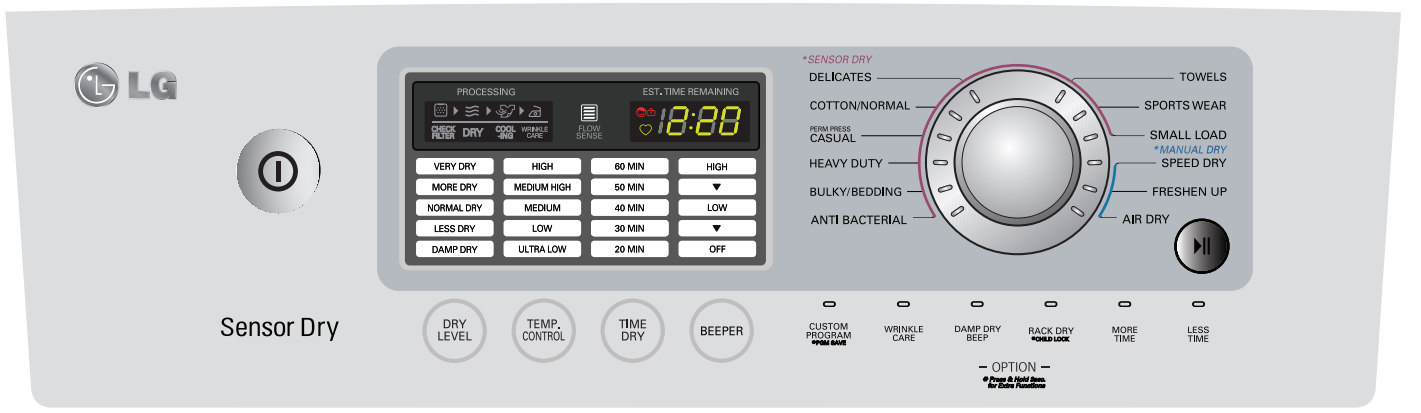
Dryer rack (1 each)

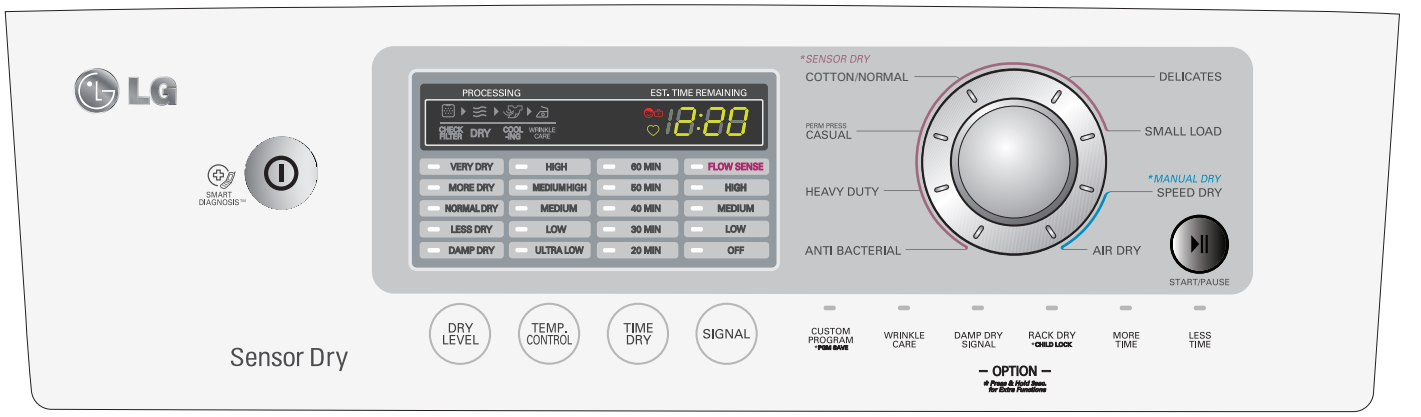
* Not on all models

See page 6 of this manual for usage instruction.

ITEM		DLE5001W DLG5002W DLE5070W DLG5071W DLE4901W DLG4902W		REMARK
Material & Finish	Color	Blue White		
	Top Plate	Powder coating		
	Door Trim	Spray		
Power Supply		Elec.	120 V / 240 V / 60 Hz (26 A)	
			120 V / 208 V / 60 Hz (23 A)	
		Gas	120 V / 60 Hz (11.5 A)	
Power Consumption	Motor	250W (4.5A)		AC 120V
	Heater	5400W (22.5A)		AC 240V(Electric Model)
	Lamp	15 W (0.2A)		DC 12V
	Gas Valve	13 W (0.11A) x 2		DC 120V(Gas Model)
	AG Heater	1100W (9.2A)		DC 120V(Steam Model)
	Pump	2.4W (0.15A)		DC 9V(Steam Model)
Control Type		Electronic		
Drum Capacity		7.3 cu.ft.		
Weight (lbs) - Net		127.4		
No. of Programs		14		
No. of Dry Options		6		
No. of Temperature Controls		5		
No. of Dry Levels		5		
Sound levels		3		
Sensor	Moisture	Available		Electrode sensor
	Temperature	Available		Thermistor
Reversible Door		Available		
Drum		Stainless Steel		
Dryer Rack		Available		
Child Lock		Available		
Interior Light		Available		
Product (WxDxH)		27 x 28.9 x 45.3 (inch)		
Packing (WxDxH)		29.8 x 31.3 x 47.24 (inch)		

2 FEATURES AND BENEFITS





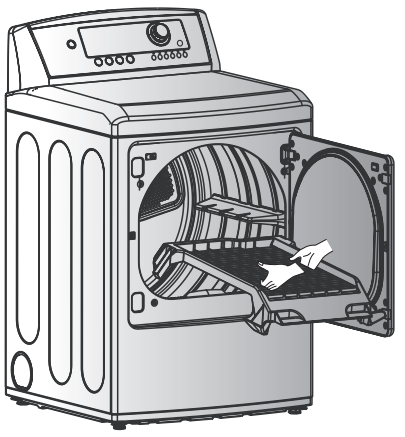
3 INSTALLATION INSTRUCTIONS

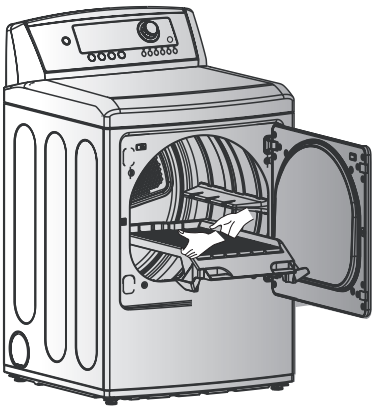
Dryer Rack Installation Instructions

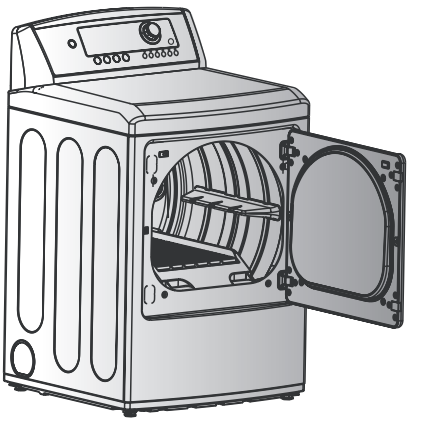
1 Open the door. Hold the dryer rack with both hands.

2 Put the dryer rack into the drum

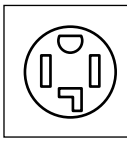
3 Check and be sure that the front of the rack is properly seated behind the lint filter.





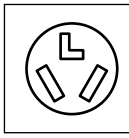


Review the following options to determine the appropriate electrical connection for your home:



4-wire receptacle (NEMA type14-30R)

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

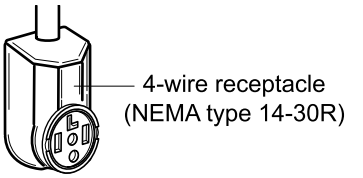


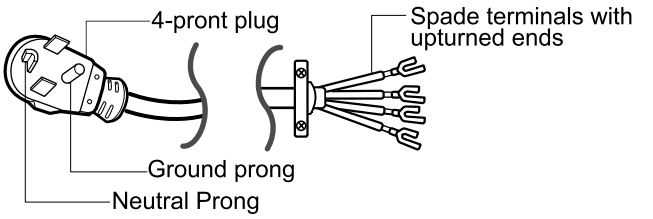
3-wire receptacle (NEMA type10-30R)

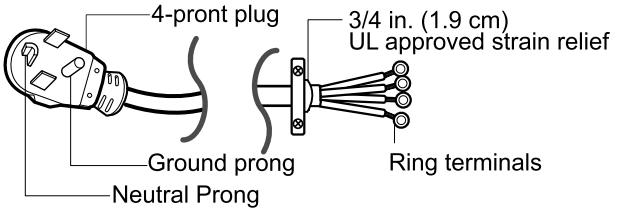
Use the instructions under option 2 or 3 if your home has a 3-wire receptacle (NEMA type 10-30R). Use option 2 if local codes and ordinances permit the connection of a chassis ground to the neutral connector. If this is not permitted, use option 3.

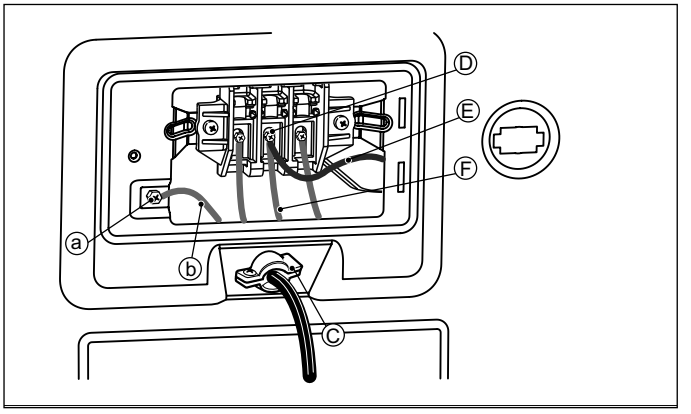
Option 1: **4-wire connection with a Power supply cord.**

- 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.





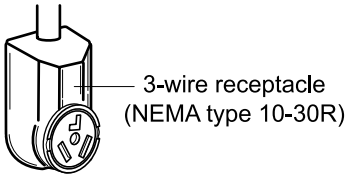


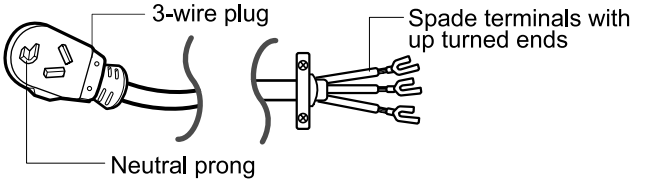


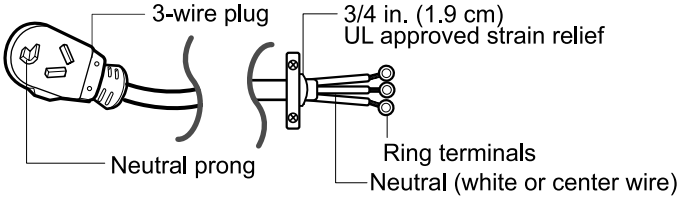
1. Connect the neutral wire (white) of the power cord to the center terminal block screw.
2. Connect the red and black wires to the left and right terminal block screws.
3. Connect the ground wire (green) of the power cord to the external ground screw. Remove the neutral ground wire of appliance and 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**

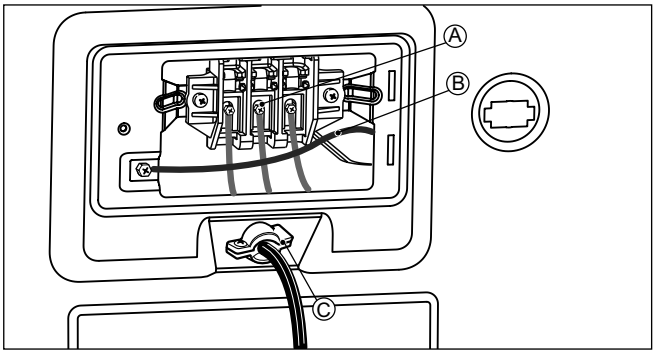
lf your local codes or ordinances permit the connection of a frame-grounding conductor to the neutral wire, use these instructions. If your local codes or ordinances do not allow the connection of a frame-grounding conductor to the neutral wire, use the instructions under **Section 3: Optional 3-wire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







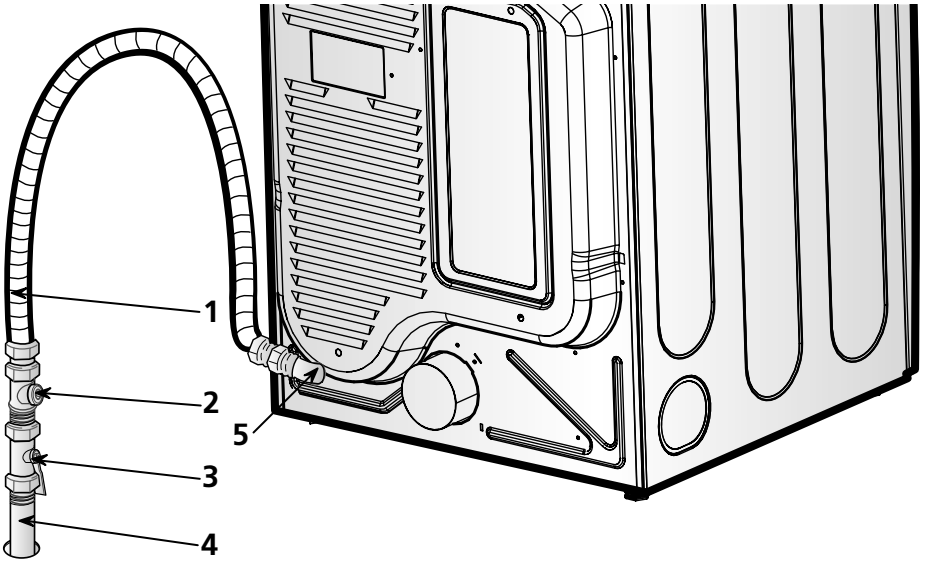
1. Connect the neutral (white or center) wire (B) to the center, silver colored, screw (A) and tighten securely.
2. Connect the other two power cord wires (red and black) to the left and right terminal block screws and tighten securely.
3. Tighten the strain relief screws (C) securely.



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.
4. 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

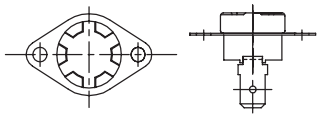
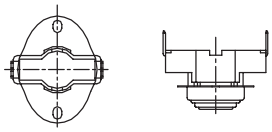
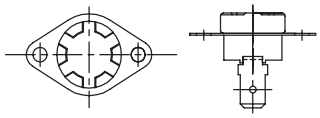
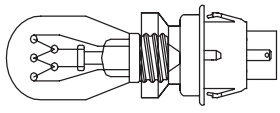
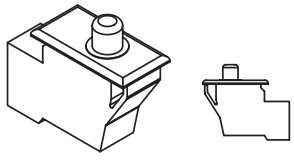
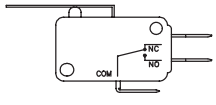
4 DRYER CYCLE PROCESS

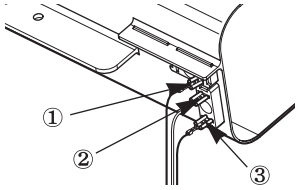
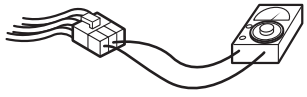
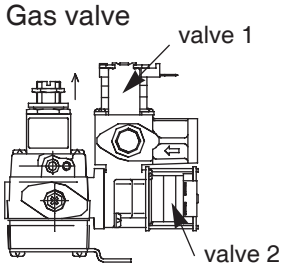
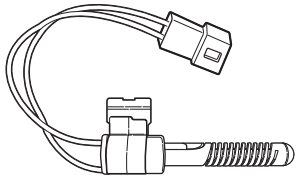
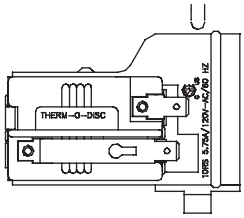
Cycle		Default			Conditions of operation and termination				
					Drying		Cooling		Wrinkle care
		Temp-erature	Dry Level	Display time	Electro-sensor	Temp-Control	Default time	Temp-Control**	Time
Sensor Dry *	ANTIBACTE-RIAL	HIGH	Very Dry	70min	Saturation	68±4℃ 155±7°F	5min	47±5℃ 113±9°F	3Hr
	BULKY/ BEDDING	MEDIUM	Normal / Adjustable	55min	Saturation	60±4℃ 140±7°F	5min	47±5℃ 113±9°F	
	HEAVY DUTY	HIGH	Normal / Adjustable	54min	Saturation	68±4℃ 155±7°F	5min	47±5℃ 113±9°F	
	PERM PRESS CASUAL	LOW	Normal / Adjustable	36min	Saturation	52±3℃ 126±5°F	5min	47±5℃ 113±9°F	
	COTTON/ NORMAL	MEDIUM	Normal / Adjustable	41min	Saturation	60±4℃ 140±7°F	5min	47±5℃ 113±9°F	
	DELICATES	LOW	Normal / Adjustable	32min	Saturation	52±3℃ 126±5°F	5min	47±5℃ 113±9°F	
	TOWELS	MEDIUM / HIGH	Normal / Adjustable	55min	Saturation	66±4℃ 151±7°F	5min	47±5℃ 113±9°F	
	SMALL LOAD	HIGH	Normal / Adjustable	30min	Saturation	68±4℃ 155±7°F	5min	47±5℃ 113±9°F	
	SPORTS WEAR	MEDIUM	Normal / Adjustable	27min	Saturation	60±4℃ 140±7°F	5min	47±5℃ 113±9°F	
Manual Dry **	SPEED DRY	HIGH	Off	25min	Saturation	(68±4℃) (155±7°F)	5min	47±5℃ 113±9°F	3Hr
	FRESHEN UP	MEDIUM / HIGH	Off	20min	Saturation	(66±4℃) (151±7°F)	5min	N/A	
	AIR DRY	NO HEAT	Off	30min	Saturation	NO HEATER	5min	N/A	
Load			Heater		→				Off Time: 6min (- - - →) On Time: 10sec
			Motor		Temperature Control for each cycle (- - - →)				

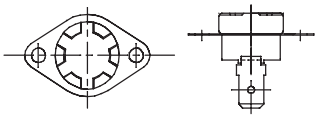
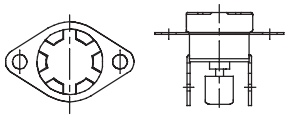
* Sensor dry: Dry Level is set by users.
** Manual dry: Temperature control is set by users.
Default settings can be adjusted by users.

5 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  • Check Top Marking: N140	Measure resistance of terminal to terminal ① Open at 284 ± 41°F (140 ± 5°C) ②Auto reset -31°F (-35°C) Same shape as Outlet Thermostat.	If thermal fuse is open must be replace 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 (94 ± 7°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 ± 41°F (85 ± 5°C) ② Close at 167 ± 41°F (75 ± 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 ① Terminal: COM - NC(1-3) ② Terminal: COM - NC (1-2) 2) Door switch push: push ① Terminal: COM - NC (1-3) ② Terminal: COM - NC (1-2)	① Resistance value < 1Ω ② Resistance value ≒ ∞ ① Resistance value ≒ ∞ ② Resistance value < 1Ω	
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 ~ 104°F (10~40°C)	Resistance value: 10Ω	• Heater case Hi limit • Electric type
9. Motor			• See Page 14
10. Gas valve 	Measure resistance of the following terminal ① Valve 1 terminal ② Valve 2 terminal	① Resistance value: > 1.5kΩ ② Resistance value: > 1.5~2.5kΩ	• Gas type
11. Igniter 	Measure resistance from terminal to terminal.	Resistance value: 50~800 Ω	• Gas type
12. Frame Detect 	Measure resistance of termina to terminal ① Open at 370°F (Maximum) ② Close at 320°F	① Resistance value ≒ ∞ ② Resistance value < 1Ω	• Gas type

Component	Test Procedure	Check result	Remark
13. Outlet Thermostat (Auto reset)  • Check Top Marking: N95	Measure resistance of terminal to terminal ① Open at 203 ± 41°F (95 ± 5°C) ② Close at 159 ± 41°F (70 ± 5°C)	① Resistance value ≒∞ ② Continuity < 1Ω	• Gas type • Gas funnel
14. Outlet Thermostatt (Manual reset)  • Check Top Marking: N100	Measure resistance of terminal to terminal ① Open at 230 ± 41°F (110 ± 5°C) ② Manual reset	① Resistance value ≒∞ ② Continuity < 1Ω	• Gas type • Gas funnel

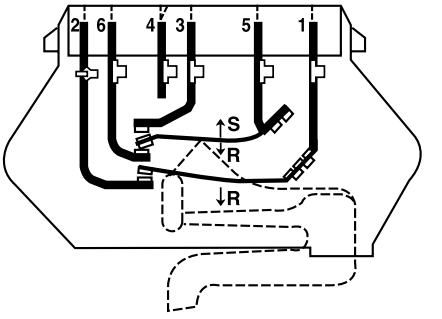
6 MOTOR DIAGRAM AND SCHEMATIC

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

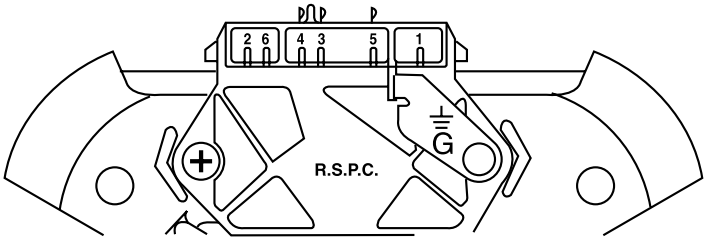
■ Contact On / Off by Centrifugal Switch

Terminal No		①	②	③	④	⑤	⑥	Remark
Mode	Resistance							
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)

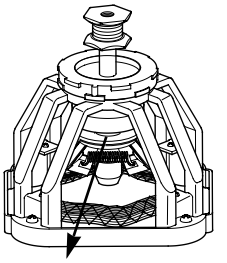
····· Open
——— Close



SWITCH SHOWN IN START POSITION

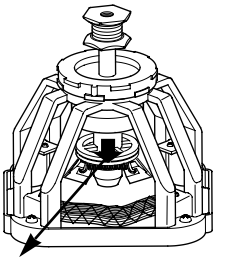


■ STOP MODE
(When Motor does not operate)



Centrifugal switch

■ .RUN MODE
(Motor operates)

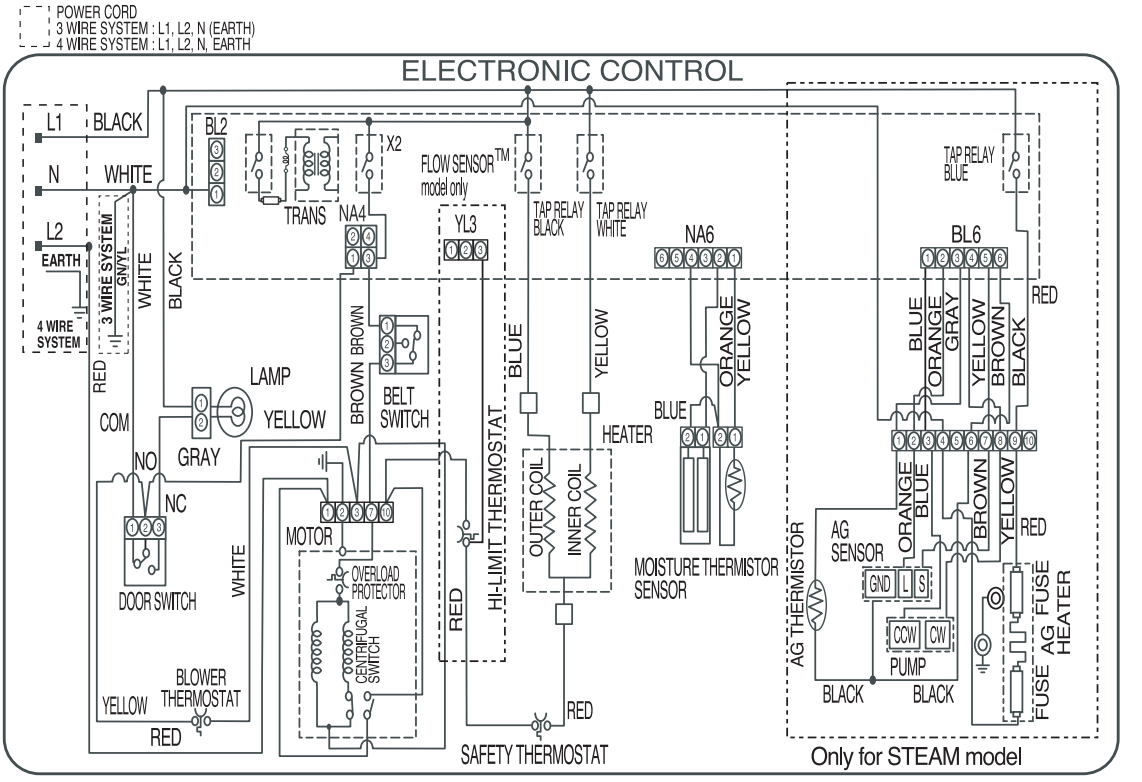


Centrifugal switch
(Pull Drive forward)

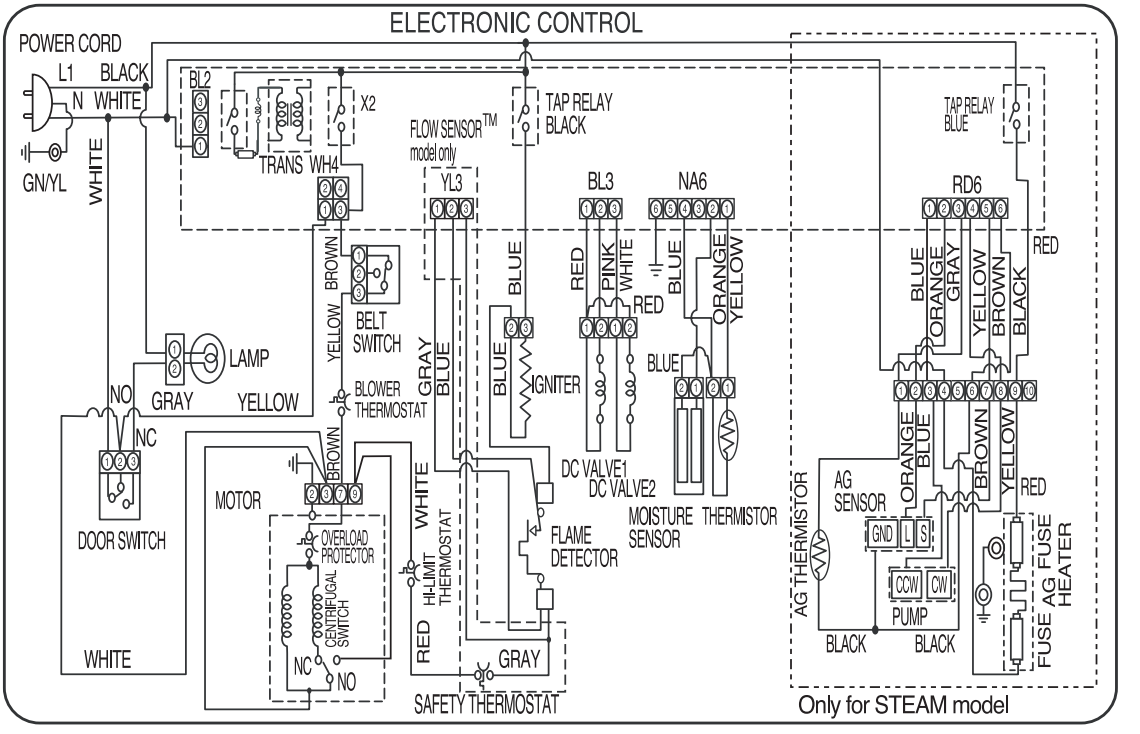
7 WIRING DIAGRAM

⚠ 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

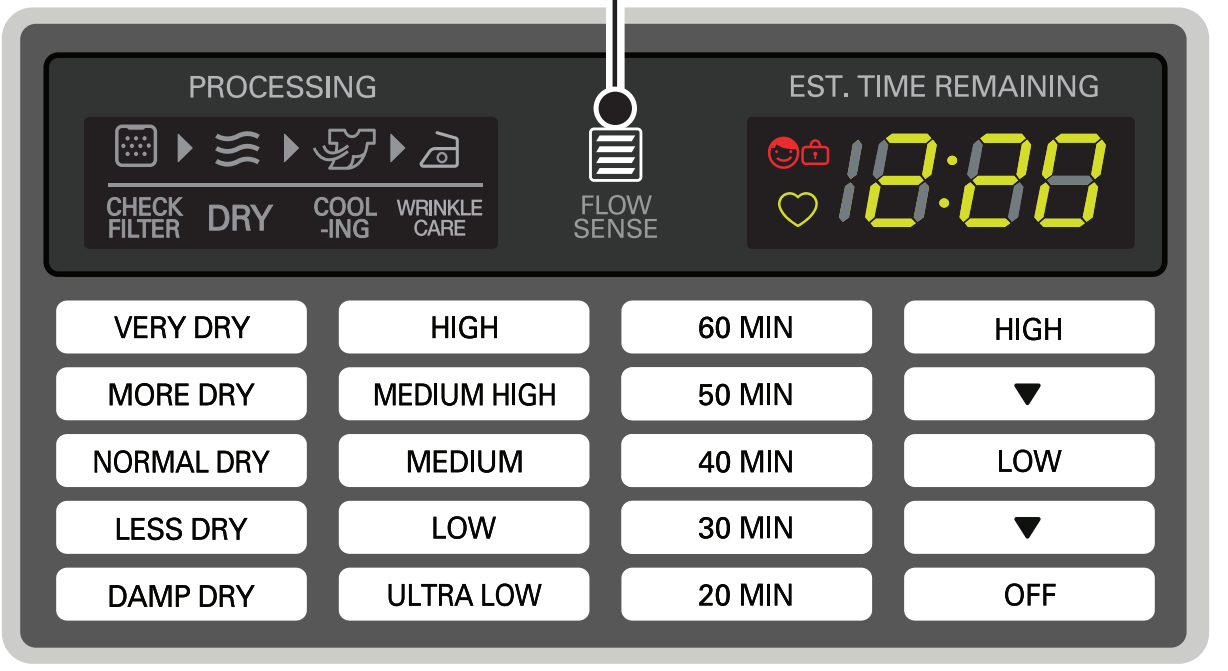


8 FLOW SENSOR FUNCTION

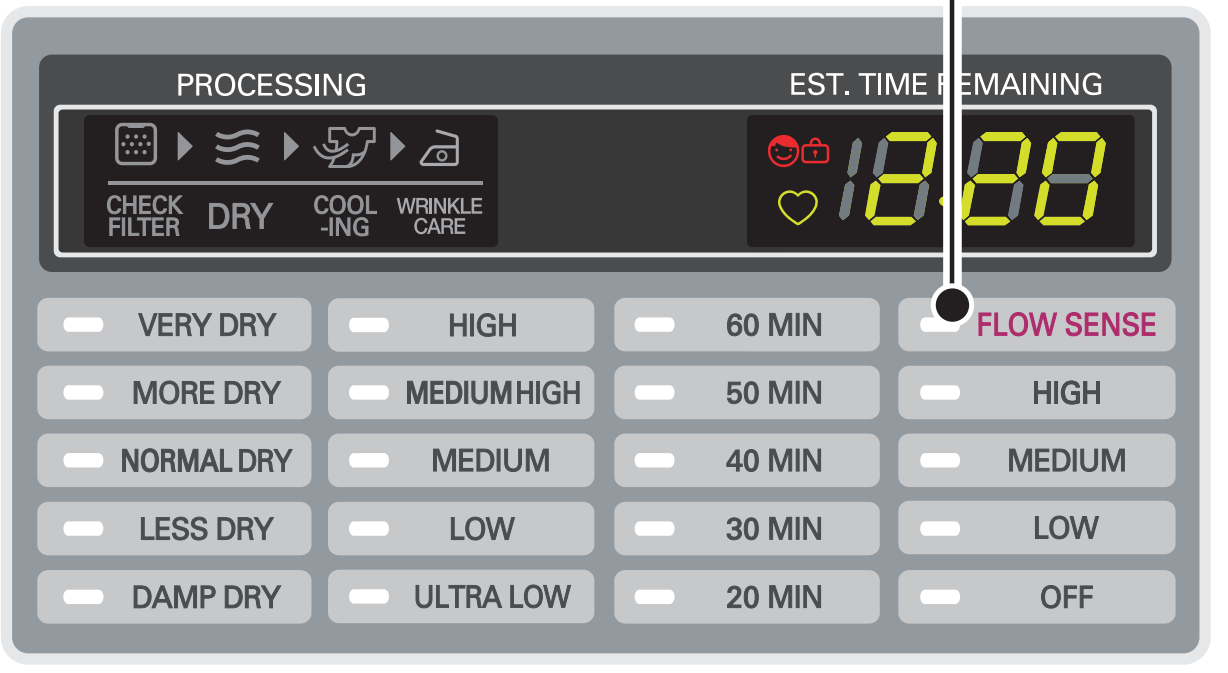
8-1 Flow sensor

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.

Flow Sensor Function



Flow Sensor Function

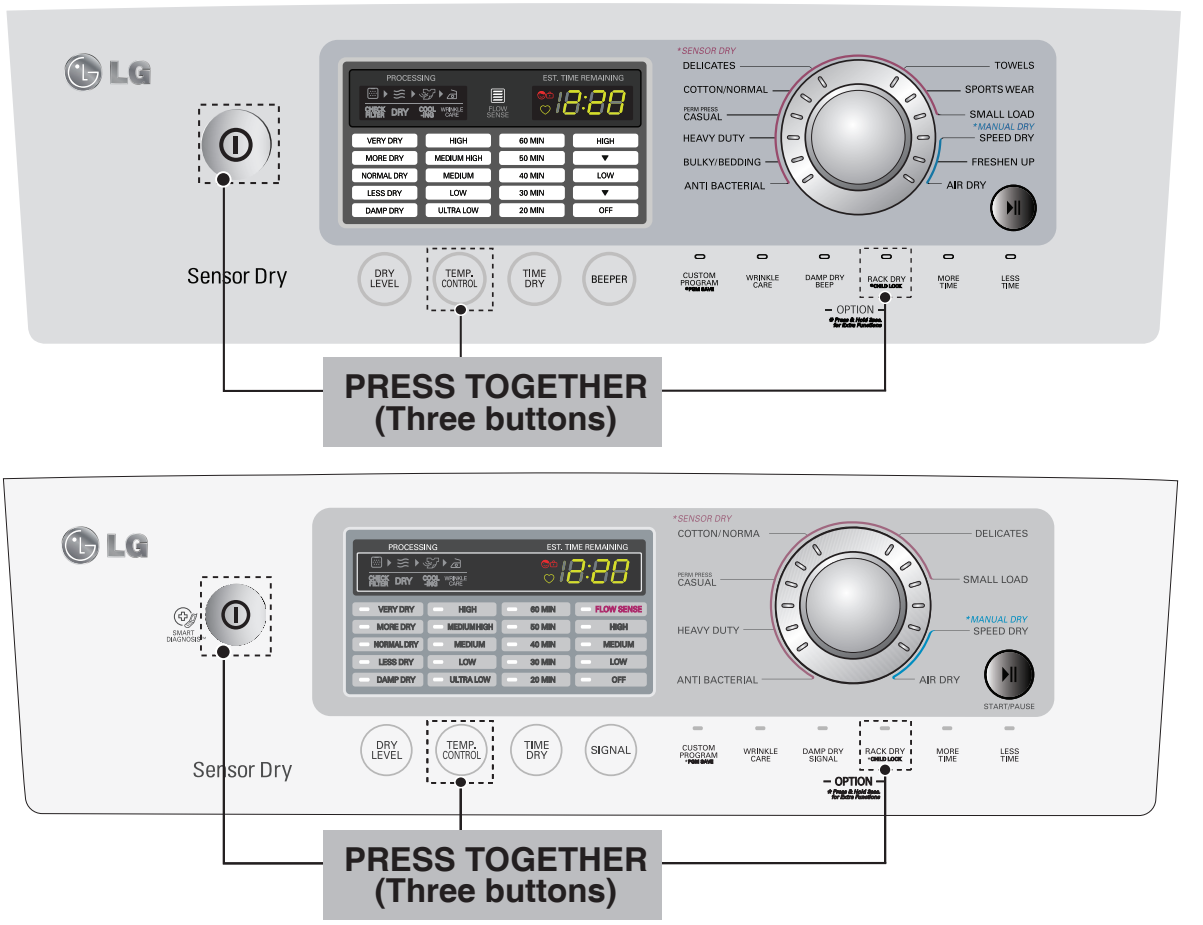


8-2 Installation check

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 **RACK DRY** and the **TEMP . CONTROL** buttons together while turning on the dryer with the POWER button i.e. Press together the three buttons **RACK DRY + 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



After installation check, If the display shows….

OR

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.

8-3 Troubleshooting for flow sensor dryer

1. FLOW SENSE indicator light is on. (The display shows d90 d95)

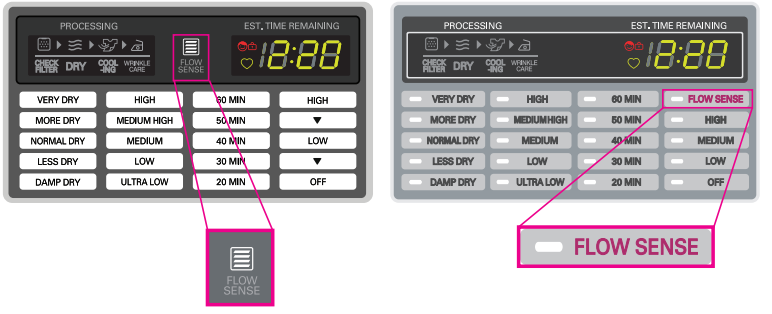
Is lint filter full?	Yes →	Clean lint filter before every load
No ↓		
Is duct clogged?	Yes →	Check & clean duct.

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

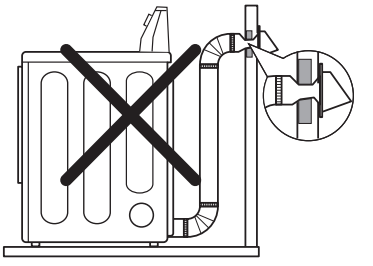
1. FLOW SENSE indicator light is on even when vents have been clean and even when the vents are off.
   → **This is Normal.** After flow sensor recheck full next cycle, flow sensor is reset.
   (Flow sensor bars or light will disappear after dryer has operated two cycle)

■ Bars or light Are Displayed but Don't Disappear

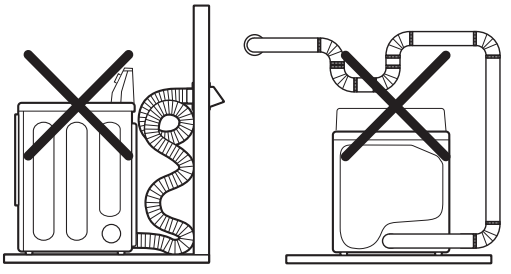
*Control Panel



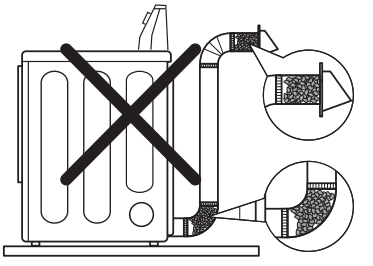
Make sure that the ductwork is not crushed or restricted.



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



Check for blockages and lint build up.



9 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

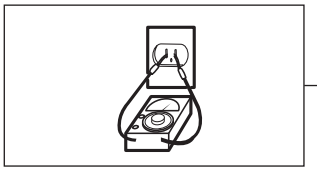
1. UNIT must be in standby (unit plugged in, display off)
2. Press POWER while pressing MORE TIME and LESS TIME simultaneously.
3. Press START/PAUSE button to advance through diagnostics.

Pressing the START/PAUSE	CHECKING ACTION	DISPLAY	CHECKPOINT
None	Electric control & Temperature sensor	8E9 (Elec Type) 898 (Gas Type)	Standard
		V00	PGM Ver (8E8-V008E8)
		tE1	Thermistor open
		tE2	Thermistor shorted
		tE4	AG Thermistor open or shorted
Once	Motor+Controller	30 = Low moisture 239 = High moisture	Motor runs 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) (Heater1 off)	Pump AD valve (11~255)	Pump runs
		E5	Pump Error
5 times	Motor, Pump, Heater2 off	OO	
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

Caution	When measuring power, be sure to wear insulated gloves, to and avoid an electric shock
Trouble Symptom	No power was applied to controller. (LED, LCD Display off)
Measurement Condition	With dryer power on; connector linked to controller.

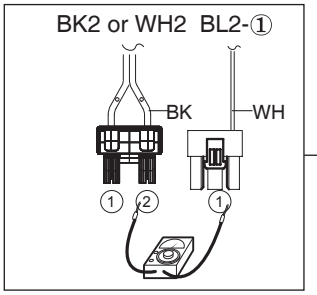


Check the outlet, is the voltage 110V ~ 125V AC?

NO

- Check the fuse or circuit breaker

YES

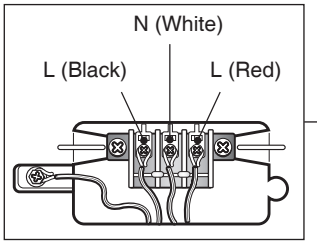


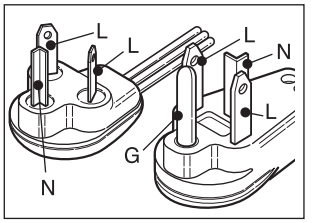
Check if the voltage measured between connector BK2 or WH2-② (Black Wire) linked to the Controller and BL2-① (White Wire) Is 110~125V?

NO

- Check if Power Cord is properly connected.

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.

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

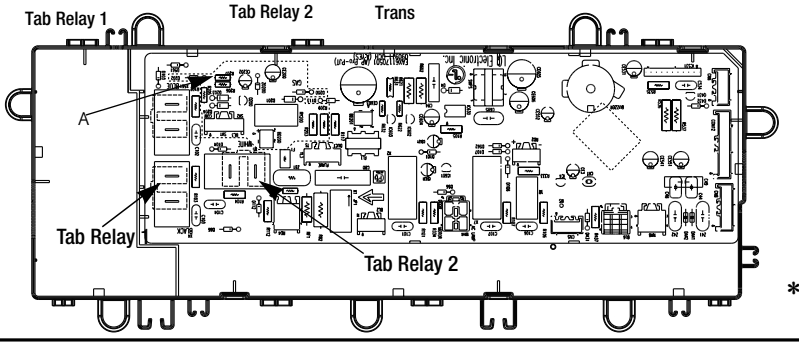
1. Power Connection

: 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± 4℃ Turn on Heater1 and Heater2.
Low Extra Low	on	off	on	off	Temperature Control below 52± 4℃ Only Turn on Heater1.

: Connection of the Tab Relay with Burner (Gas)

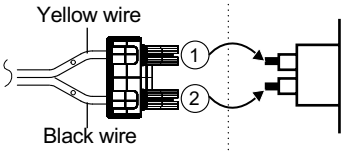
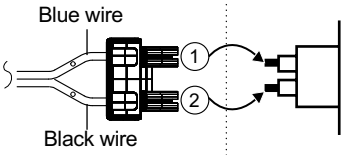
	Tab Relay 1	Burner	Remark
High Mid High Medium	O	O	Temperature Control below 70± 4℃ Turn on Burner
Low Extra Low	O	O	Temperature Control below 47± 4℃ Turn on Burner



∗ PCB ASSEMBLY LAYOUT

2. Status Mode Of The Connection

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

	Color	Connection		Remark
		Harness	PCB	
Connector Housing	Black	 **Connector Housing**	**Tap relay 1**	Check the Matching color Between Harness wire and Tab Relay. (Black Housing – Black Tab Relay)
	White	 **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

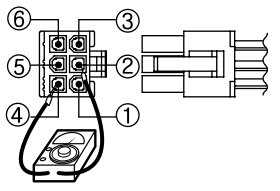
⚠ CAUTION

- 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	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.

Take the NA6 Connector from the Controller.

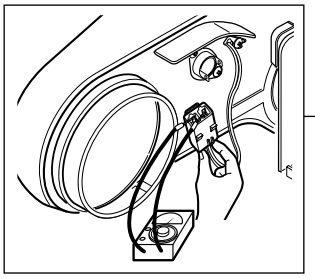


Short with metal to the NA6 connector's Pin ① (Blue Wire) and Pin ④ (Orange Wire) to controller.

YES

- Check if control and the 6 pin connector are 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

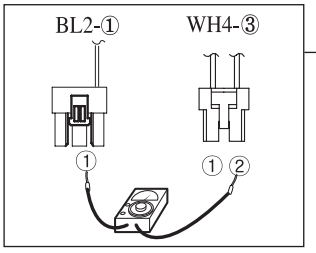
Check harness-linking connector.

■ Table 1. Resistance for Thermistor Temperature.

Air TEMP. [°F(℃)]	RES. [KΩ]	Air TEMP. [°F(℃)]	RES. [KΩ]	Air TEMP. [°F(℃)]	RES. [KΩ]
50°F (10℃)	18.0	90°F (32°C)	7.7	130°F (54℃)	2.9
60°F (16℃)	14.2	100°F (38°C)	6.2	140°F (60℃)	3.0
80°F (21℃)	11.7	110°F (43°C)	5.2	150°F (66℃)	2.5
70°F (27℃)	9.3	120°F (49°C)	4.3	160°F (71℃)	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 cord with earth line.)
Trouble Symptom	Drum will not rotate; no fan will function; no heater will work.
Measurement Condition	Turn the dryer's power off, then measure resistance.



Is resistance below 3Ω between connector BL2- ① (White wire) and WH4-③ (Brown wire)?
※ Measure while door is closed.

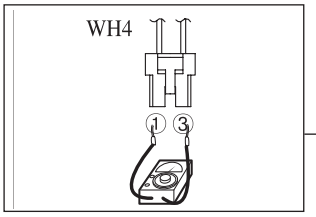
YES → • Replace control. (Relay check) • Check controller connector.

NO

Is resistance below 3Ω between connector BL2- ① (White wire) and WH4-① (Yellow wire)?
※ Measure while door is closed.

NO → • Check if door frame presses door switch knob. • Check door switch. • Check harness connection.

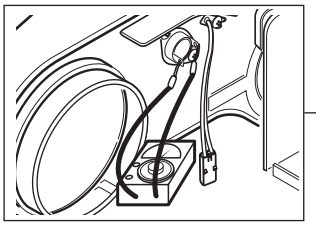
YES



Is resistance below 3Ω between connector WH4-① (Yellow wire) and WH4-③ (Brown wire)?

YES → • Replace control. (Relay check) • Check controller connector.

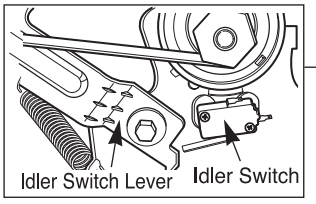
NO



Is resistance below 1Ω between terminals of outlet thermostat attached to blower housing?

NO → • Replace outlet • Thermostat. (Refer to 'component')

YES



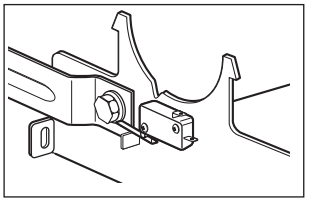
Does idle switch attached to motor bracket operate level by drum belt? (Not operating Lever is normal.)

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.

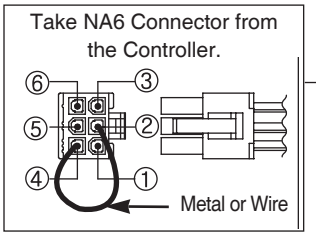
YES



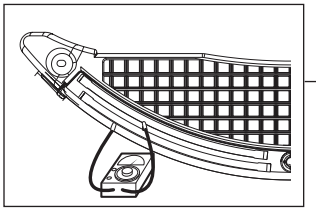
• Check motor. (Refer to 'motor diagram & check')
• Check if control connector is contacted.

■ 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.
Measurement Condition	Turn the dryer's power off, then measure resistance.



Short with metal to the 6 pin connector's Pin② (Orange Wire) and Pin④ (Blue Wire) to controller.

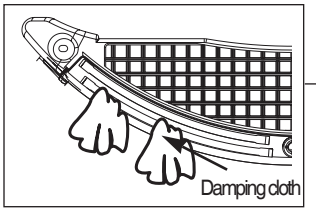


When measuring resistance in electric load, is resistance below 1Ω?

NO

- Check electro Load and harness connector
- Check harness-linking connector.

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 the NA6 connector's Pin ② (Orange wire) and Pin ④ (Blue wire)?

NO

- Replace control and check.

YES

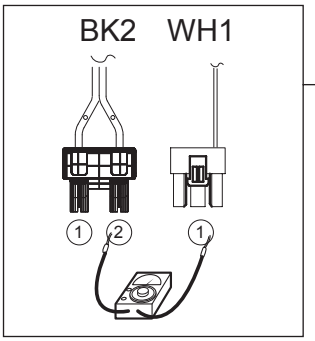
Normal Condition

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

IMC	Display Value	Voltage (DC) (between 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.



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.

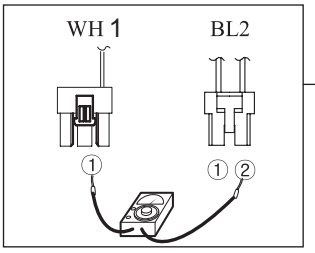
YES → • Door switch check (Refer to component testing.)

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.)

YES



Measure while door is open. Check it resistance is below 1Ω between WH4- ①(Yellow wire) and BL2-①(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- ①(Yellow wire) and BL2-①(White wire) after taking connector BL2,WH4 out from controller.

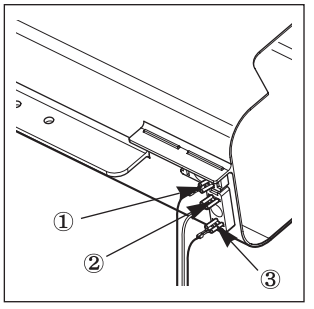
NO → • Door switch check (Refer to component testing.)

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.

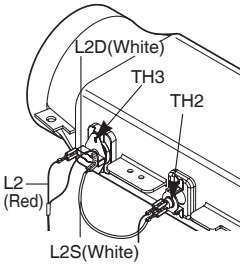


1. Is resistance between heater terminal ① and ② below 18 ~ 22Ω?
2. Is resistance between heater terminal ① and ③ below 18 ~ 22Ω?
3. Is resistance between heater terminal ② and ③ below 9 ~ 11Ω?

NO → • Replace heater.

YES

■ Only for FLOW SENSE model

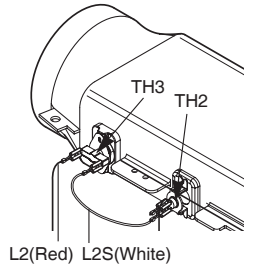


Check if the value of measured resistance is below 1Ω between terminal TH2 (Safety thermostat).

NO → • Replace TH2 (Safety thermostat) and TH3 (Hi-Limit thermostat)

YES

■ Others



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 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.

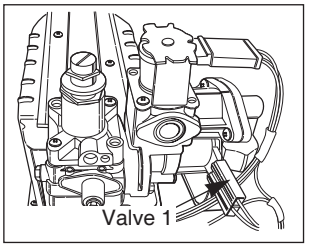
YES

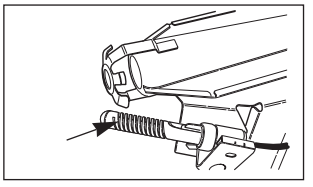
Check controller.
Check Harness-linking connector.

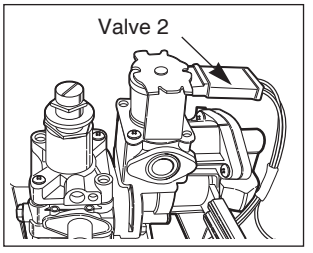
※ Wires
- L2(Red)
- L2D(White) : Go to the duct (YL3 in main pcb
- L2S(White) : Go to the safety.

■ 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
Measurement Condition	With dryer power on







Power on & start (Normal cycle)

NO

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

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 than1.5 ~ 2.5kΩ? (Measure after off) **YES** → • Change valve

NO

If valve 1 and valve 2 are under DC 10V, valves are Off? **NO** → • Change valve

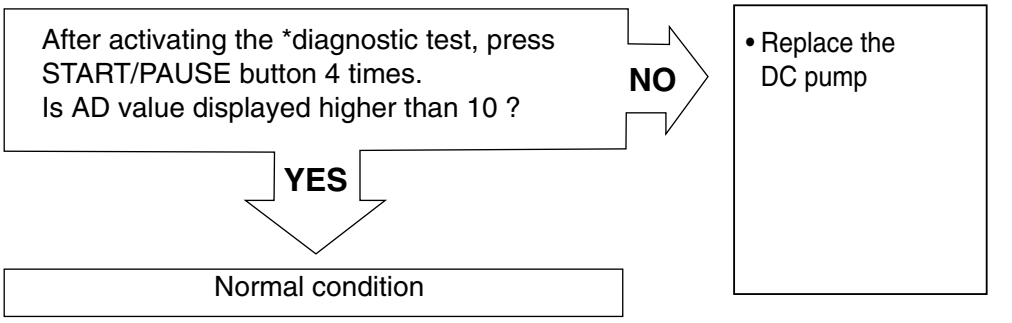
YES

• Harness check
• Controller change

NOTE: When the gas valve operates after disassembling, ignition will be off several seconds.
It is normal because there is no circulation of air

■ 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.



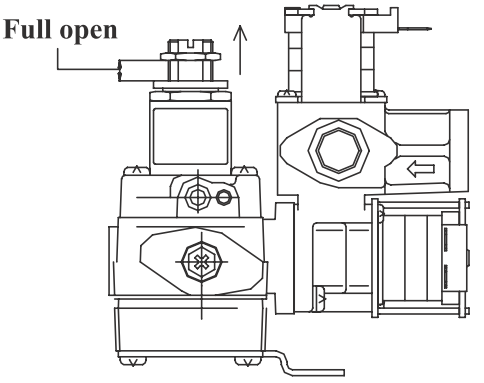
* diagnostic test : go to page 23

10 CHANGE GAS SETTING

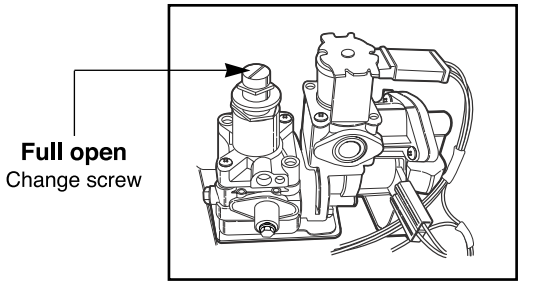
⚠ Warning **The dryer must be used with the correct gas. If the dryer is converted to propane (LP.) using natural gas could result in fire, explosion, or personal injury. Conversion must be done a qualified technician.**

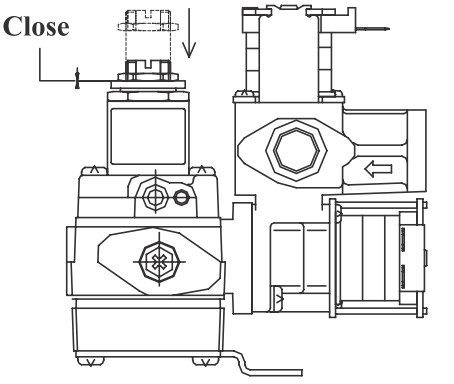
The dryer is set for natural gas at the factory. A propane conversion kit is available through the parts department to licensed technicians only. The part numbers are listed below.

STEP 1 : VALVE SETTING

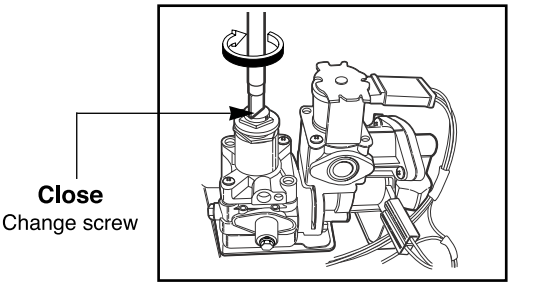


NATURAL GAS SETTING

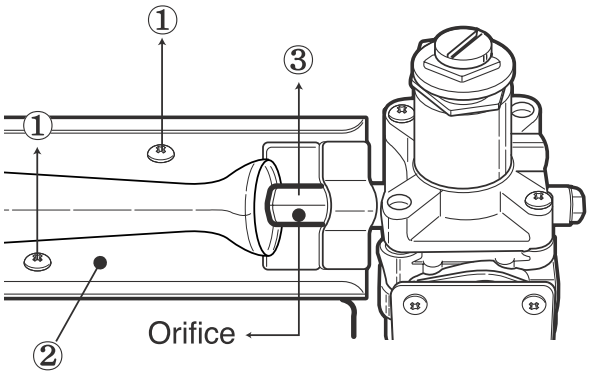




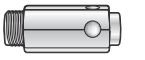
PROPANE GAS SETTING



STEP 2 : ORIFICE CHANGE

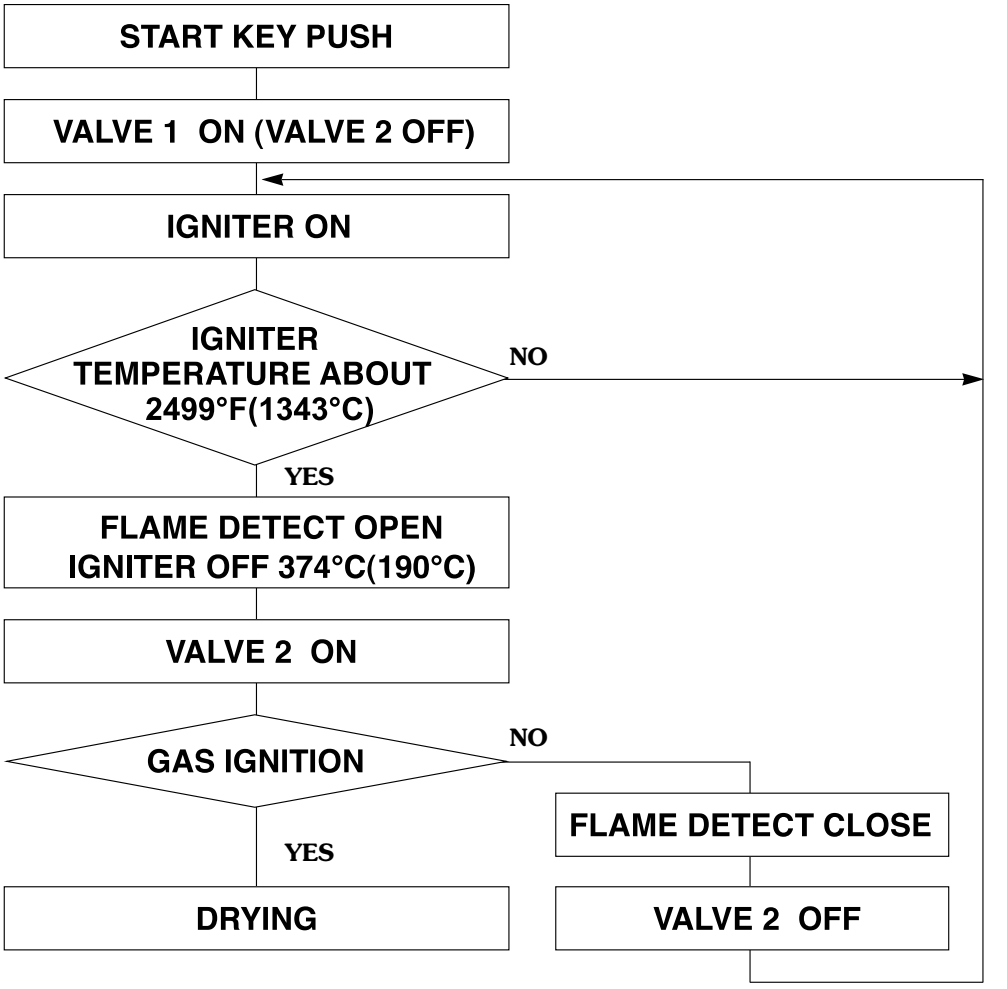


① Remove 2 screws.
② Disassemble the pipe assembly.
③ Replace Natural Gas orifice with Propane Gas orifice.

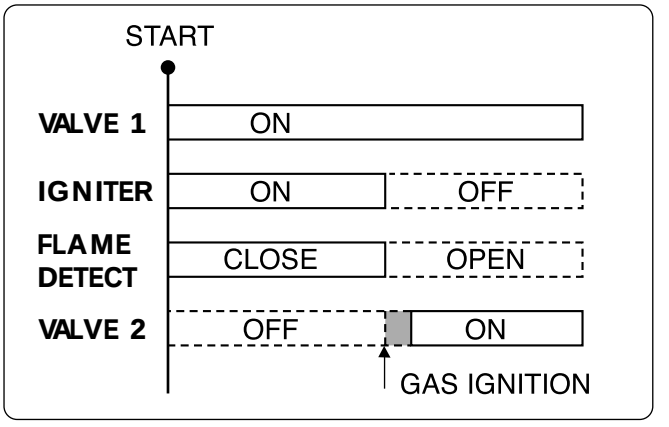
Gas type	Orifice P/No	Marking	Shape
Natural Gas	4948EL4001B	NCU	
Propane Gas	4948EL4002C	PCU	

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

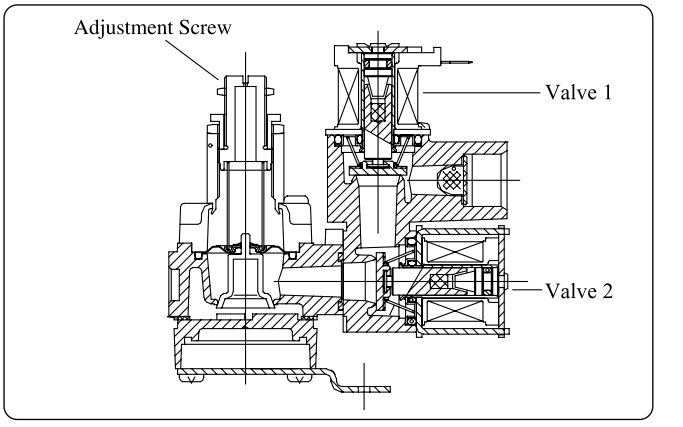
■ GAS VALVE FLOW



GAS IGNITION



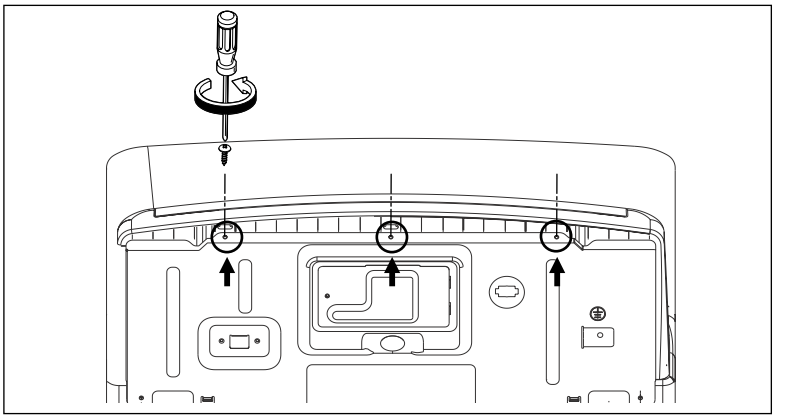
GAS VALVE STRUCTURE



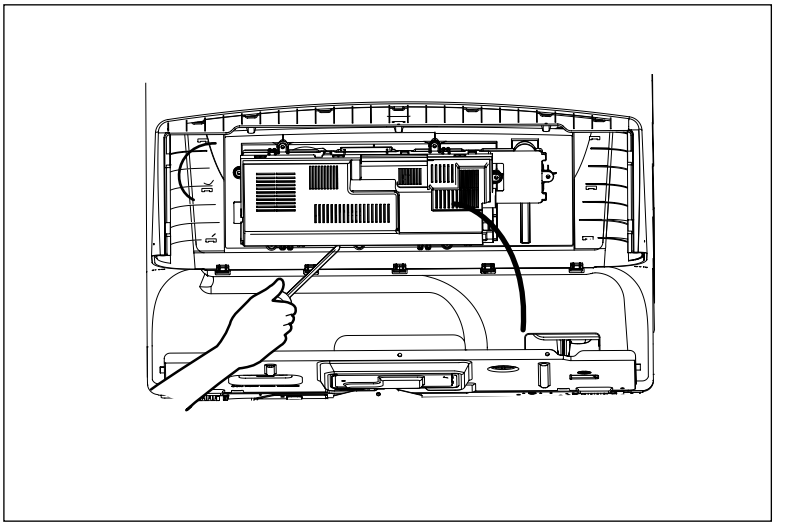
11 DISASSEMBLY INSTRUCTIONS

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

CONTROL PANEL ASSEMBLY

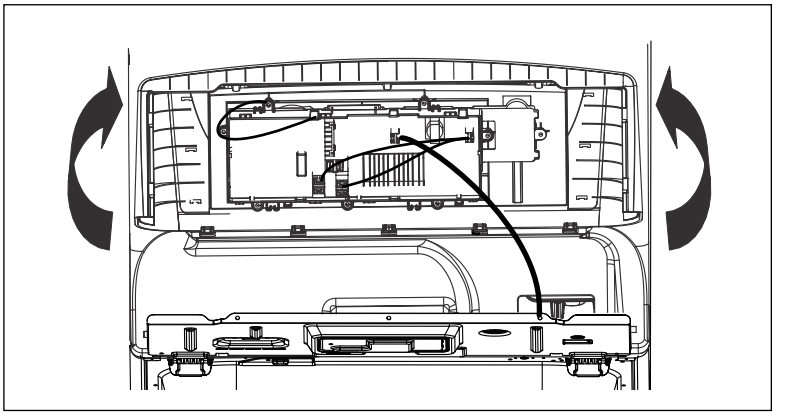


1. Remove the 3 screws from the back panel.



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.

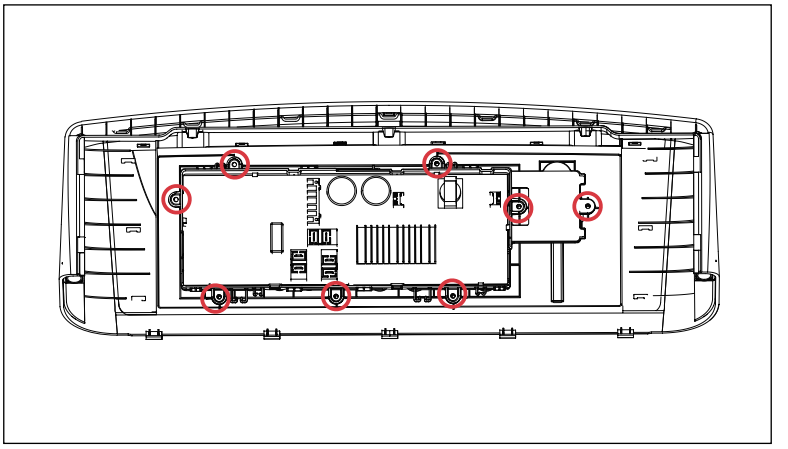
3. With a flat blade screwdriver, press the tabs on the side of the PWB (PCB) box and gently pry it open.



4. Disconnect the wiring from the PWB (PCB) board.

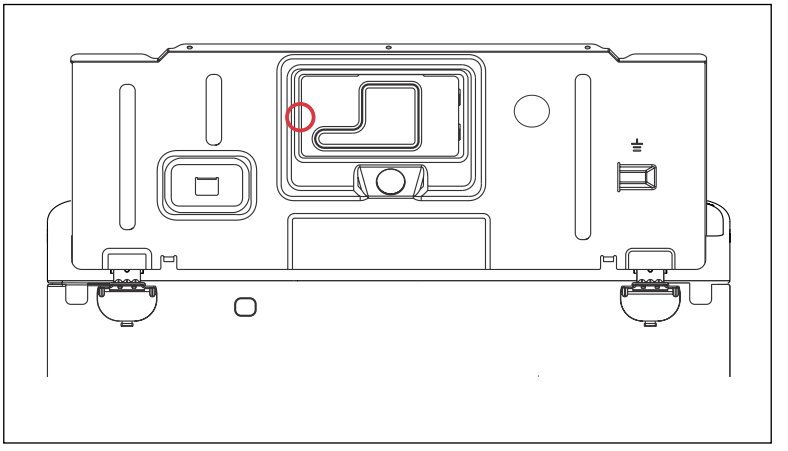
5. Disassemble the control panel assembly from top cover.

CONTROL PANEL

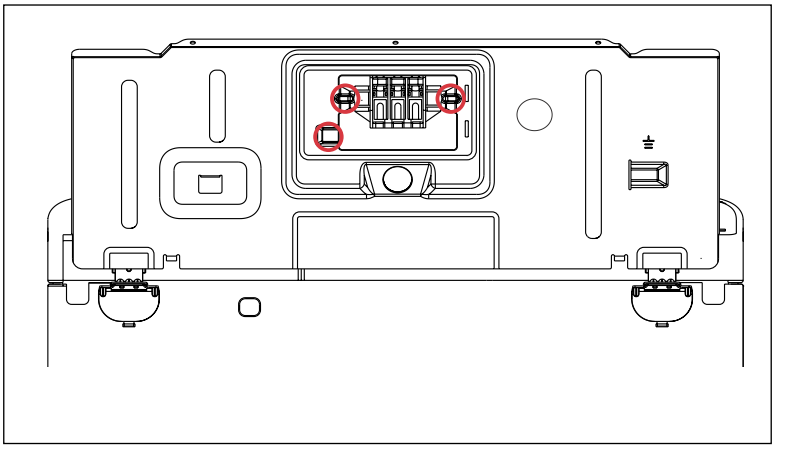


1. Remove 8 screws from control panel assembly.
2. Separate PCB from control panel.

PANEL REAR [ELECTRIC]

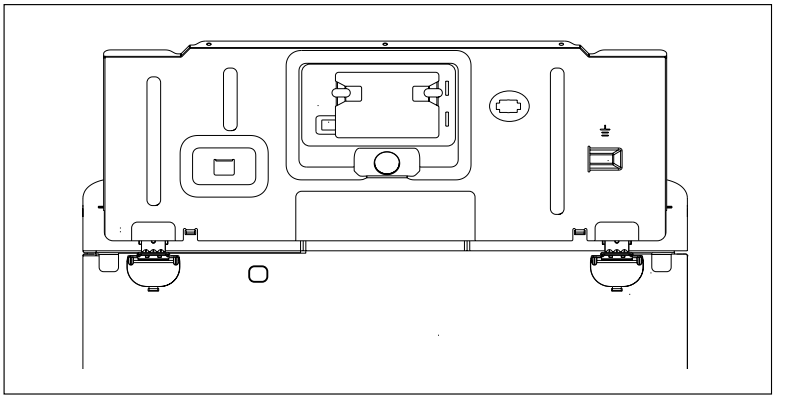


1. Remove 1 screw.
2. Pull out the cover.



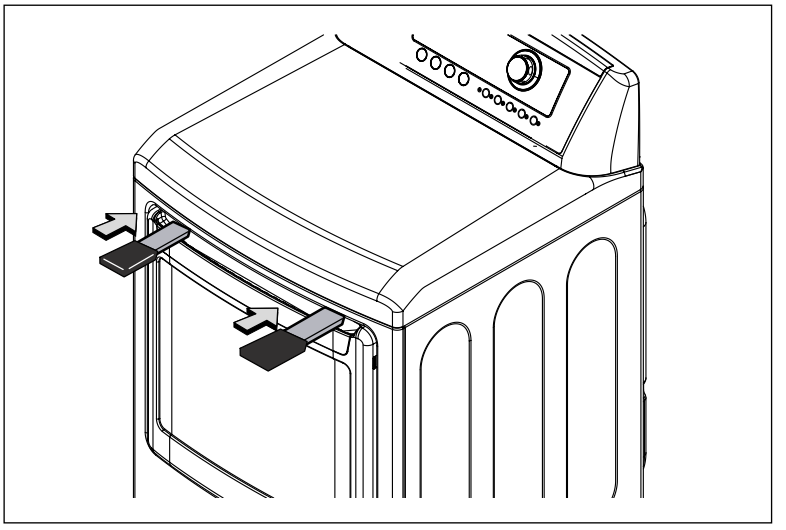
1. Remove 3 screws.
2. Disassemble terminal block and wire from panel rear.

PANEL REAR [COMMON]



1. Remove 3 screws remained on the panel rear.
2. Lift out the panel rear.

TOP COVER

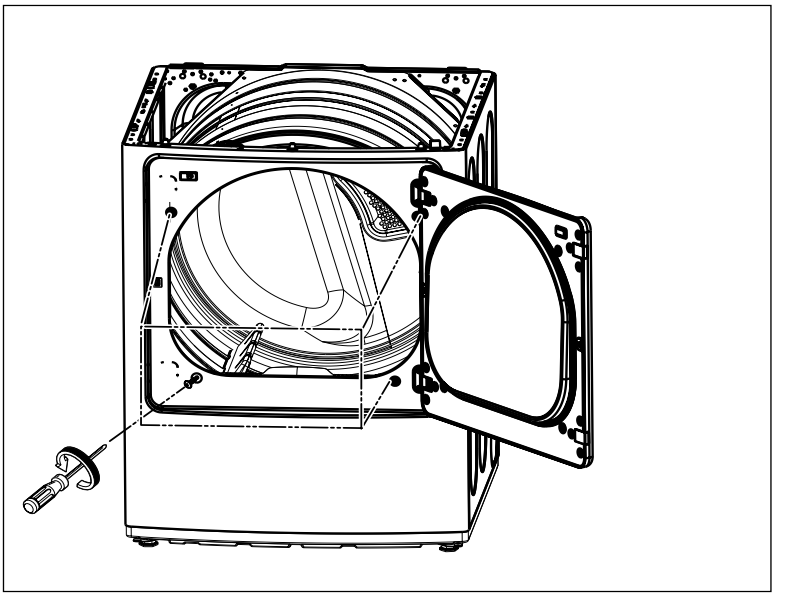


⚠ WARNING!

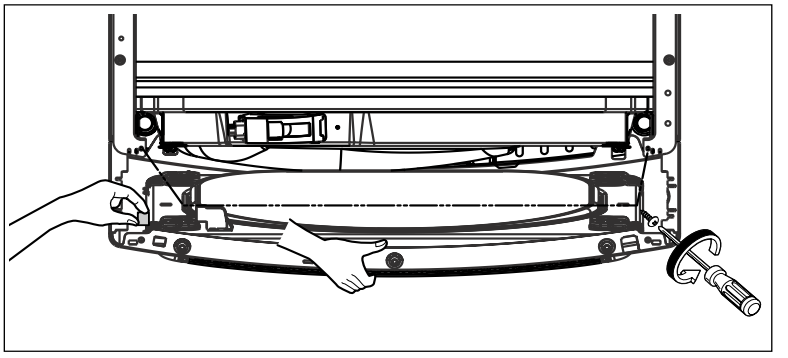
when you press the holder, be careful scratch. For preventing the scratch, prepare the soft material.

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.

CABINET COVER



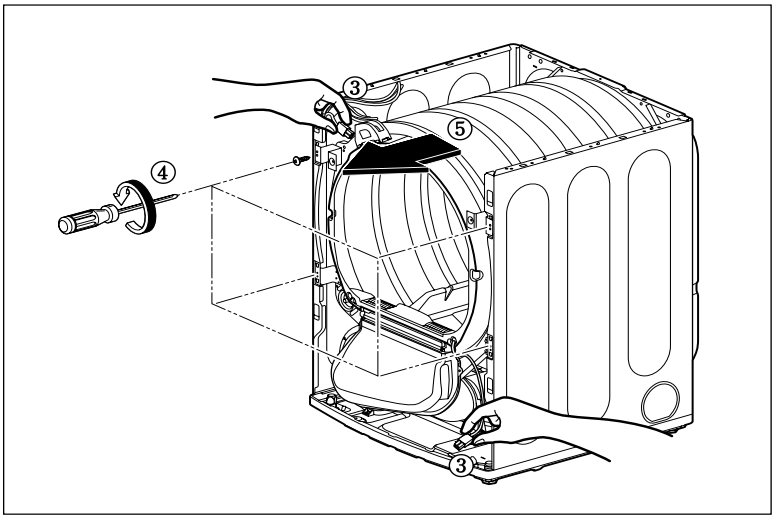
1. Open the door and remove the 4 screws from the cabinet cover then close the door.



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]

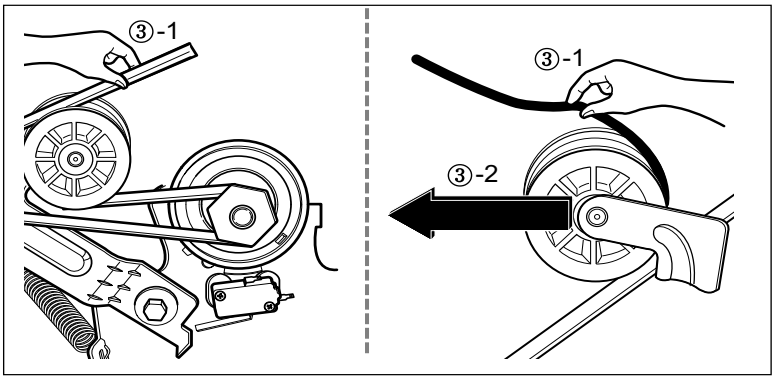


⚠ WARNING!

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

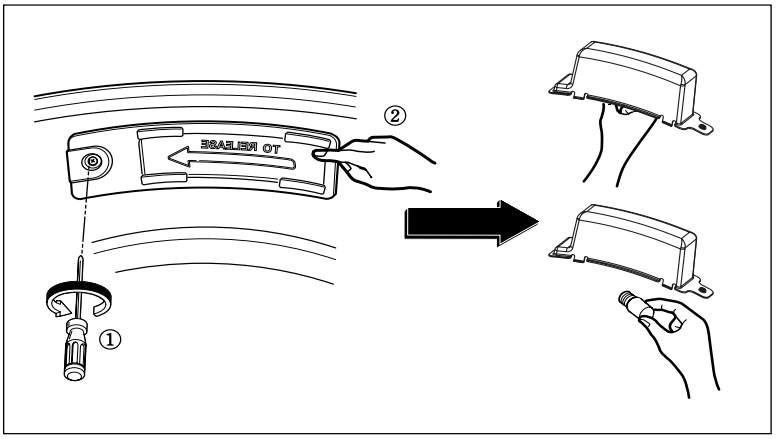
1. Disassemble the top plate.
2. Remove cabinet cover.
3. Disconnect the door lamp and electrode sensor connector.
4. Remove 4 screws.
5. Disassemble the tub drum [Front].

DRUM ASSEMBLY



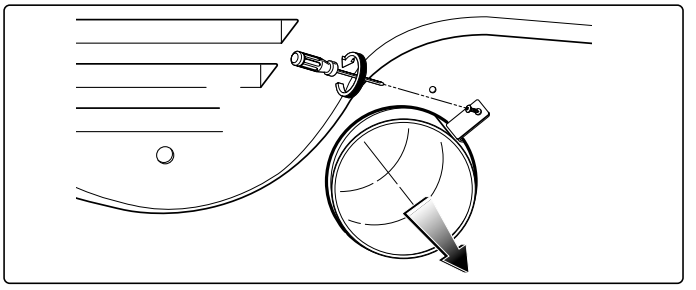
1. Disassemble the top plate.
2. Remove the cabinet cover and tub drum [front].
3. Loosen belt from motor and idler pulleys.
4. Carefully remove the drum.

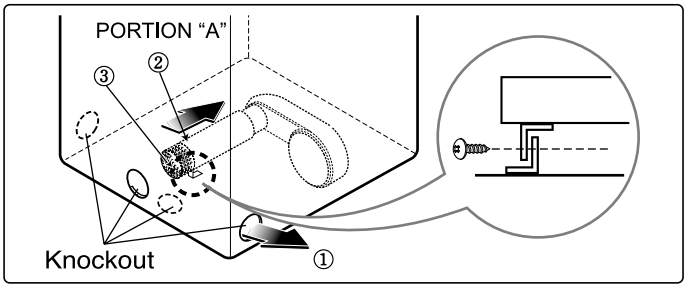
CHANGING THE DRUM LAMP

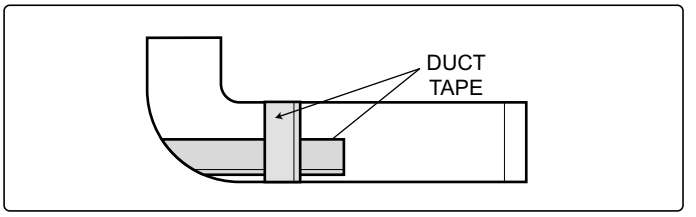


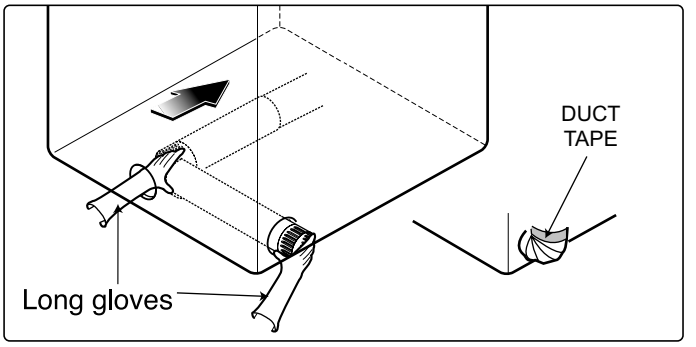
1. Disassemble the door.
2. Hold the lamp shield in place while removing the screw.
3. Slide the shield up and remove.
4. Remove the bulb and replace with a 15 watt, 120 volt, candelabra-base bulb.
5. Replace the lamp shield and screw.

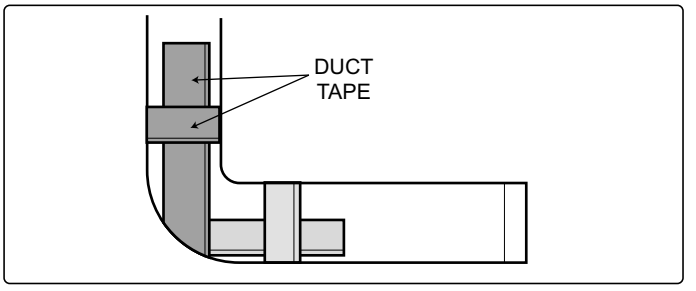
DRYER EXHAUST CHANGE











⚠ 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.

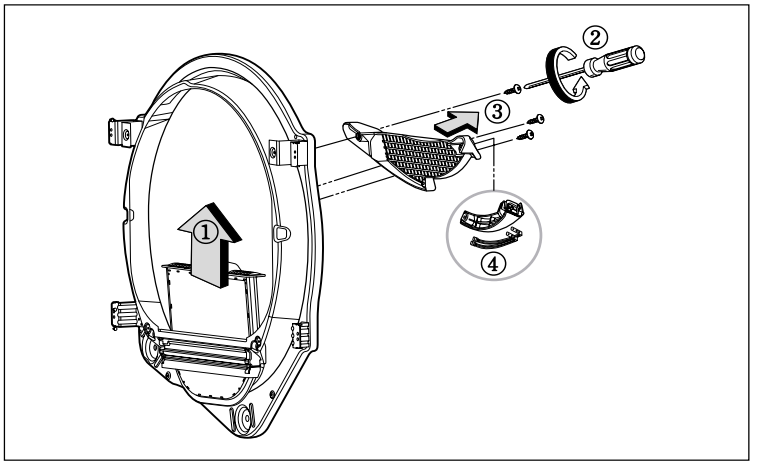
2-1. Detach and remove a knockout at the botton, left or right side as desired. (Right side vent not available on gas dryer)
①, ②, ③ the order of work.

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



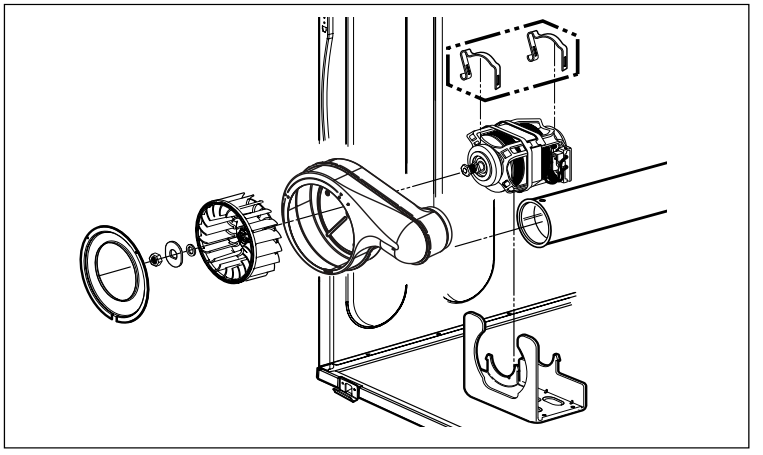
1. Remove the filter.

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.

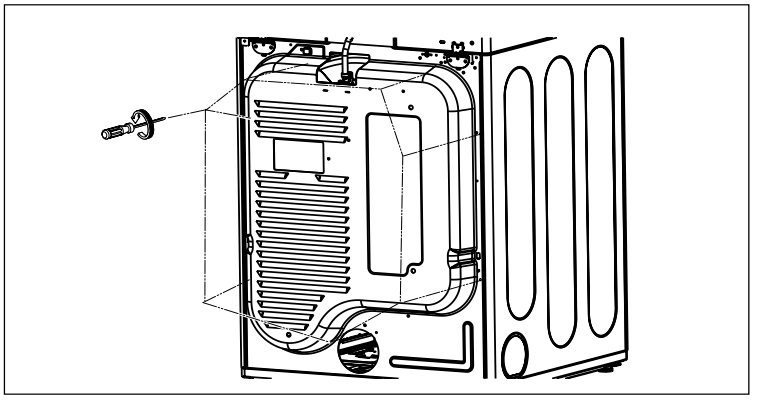
4. Remove 2 screws and cover (Air guide).

5. Remove the bolt and washer.

6. Remove the fan.

7. Disconnect the motor clamp and motor.

BACK COVER



1. Disassemble the top plate.

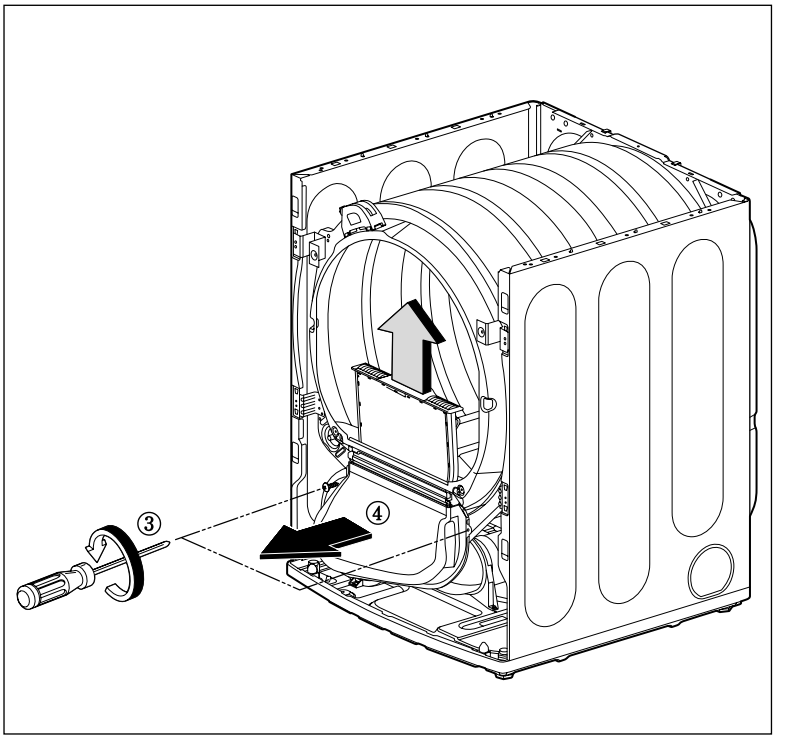
2. Remove the cabinet cover and tub drum [Front].

3. Remove the drum assembly.

4. Remove 7 screws.

5. Pull the tub drum [Rear] towards the front.

AIR DUCT



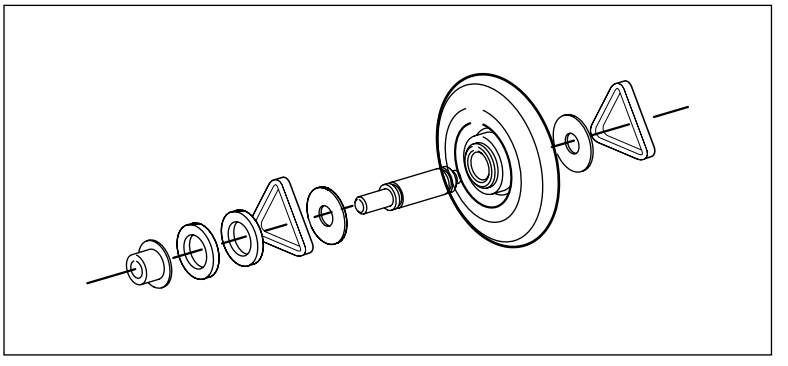
1. Disassemble the top plate.

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].

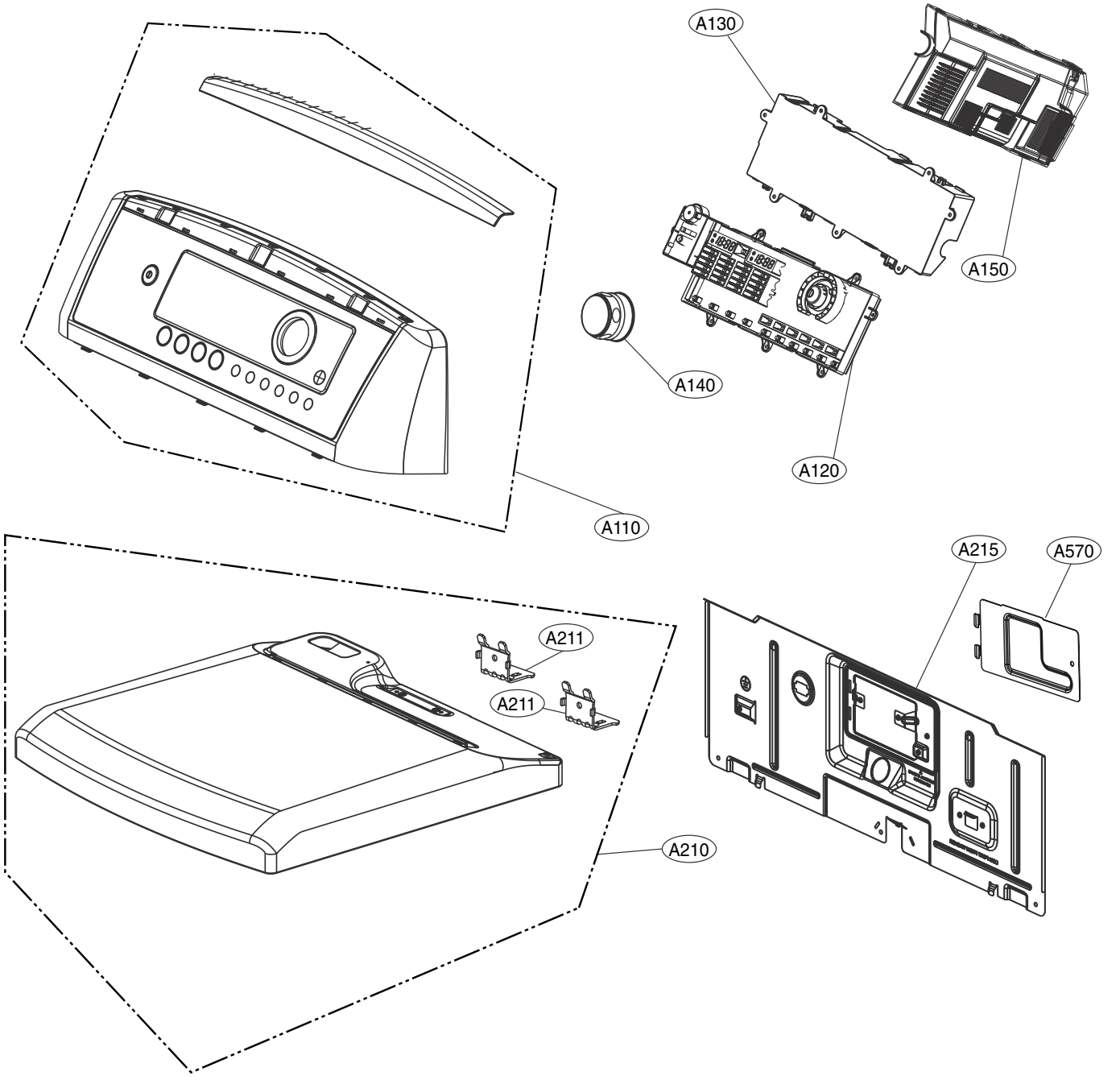
3. Remove the drum assembly and tub drum [Rear].

4. Disconnect the air duct from the tub drum [Front].

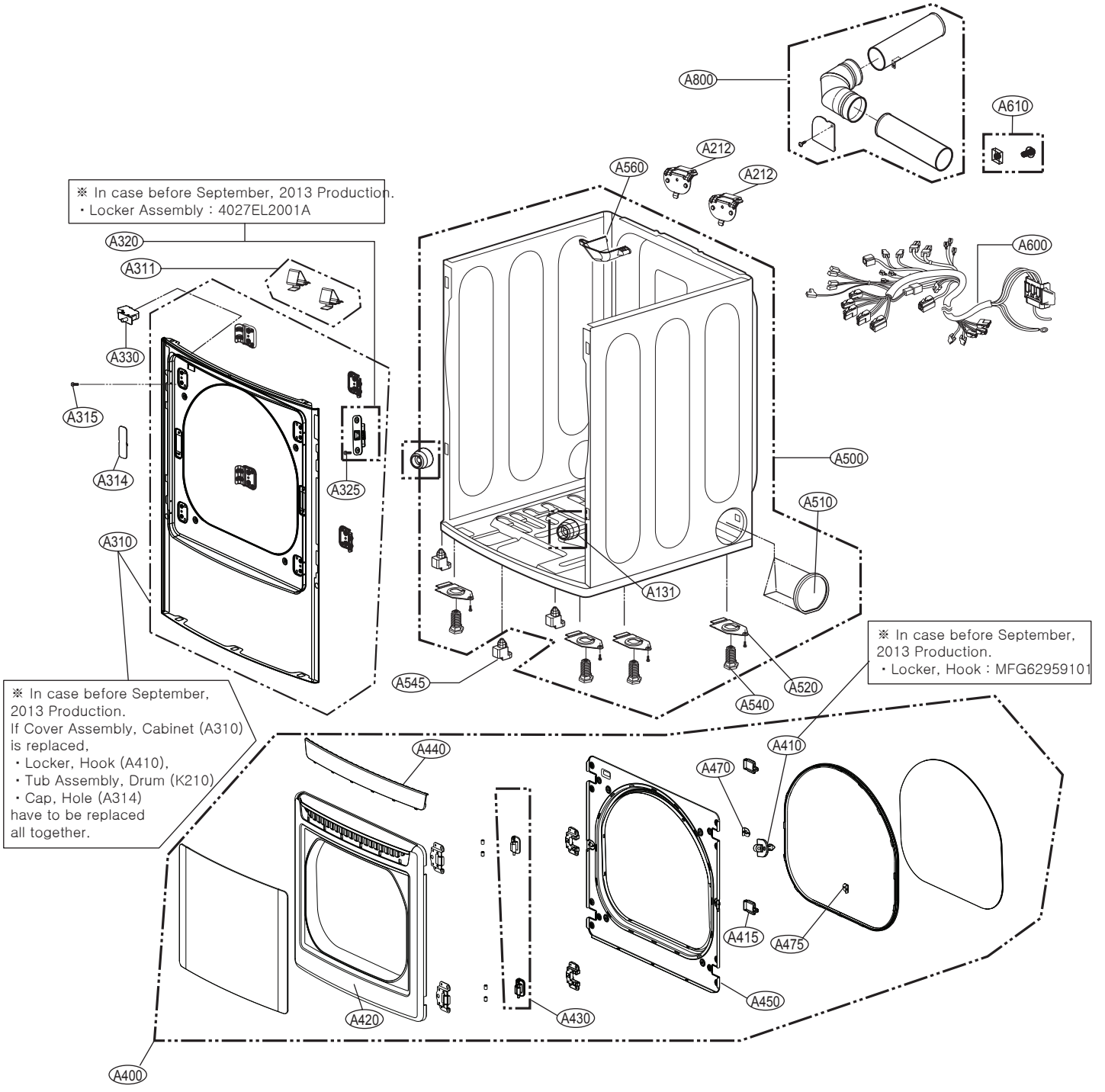
5. Remove the roller from the tub drum [Front] and tub drum [Rear].

12 EXPLODED VIEW

12-1. Control Panel and Plate Assembly



12-2-1. Cabinet and Door Assembly(Electric Type)



12-3-1. Drum and Motor Assembly: Electric Type